

09743PC.ST25.txt  
SEQUENCE LISTING

&lt;110&gt; University of Geneva

&lt;120&gt; Virulence genes, proteins, and their use

&lt;130&gt; 09743PC

&lt;150&gt; US 10/324,967

&lt;151&gt; 2002-12-20

&lt;160&gt; 64

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

&lt;211&gt; 1050

&lt;212&gt; DNA

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 1

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ttcctgatgg gcatgcggat gaagagcgaa accatcgacg agatcgtcgg cgcggtggcg      180
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gtcggcaccc gcgggcgatgg cgcgaacatc ttcaacgtgt cctcggcggc gtccttcgtg      300
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&lt;210&gt; 2

&lt;211&gt; 349

&lt;212&gt; PRT

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 2

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Met Asp Ile Lys Gly Ala Leu Asn Arg Ile Val Asn Gln Leu Asp Leu  
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 Thr Thr Glu Glu Met Gln Ala Val Met Arg Gln Ile Met Thr Gly Gln  
 20 25 30  
 Cys Thr Asp Ala Gln Ile Gly Ala Phe Leu Met Gly Met Arg Met Lys  
 35 40 45  
 Ser Glu Thr Ile Asp Glu Ile Val Gly Ala Val Ala Val Met Arg Glu  
 50 55 60  
 Leu Ala Asp Gly Val Gln Leu Pro Thr Leu Lys His Val Val Asp Val  
 65 70 75 80  
 Val Gly Thr Gly Gly Asp Gly Ala Asn Ile Phe Asn Val Ser Ser Ala  
 85 90 95  
 Ala Ser Phe Val Val Ala Ala Ala Gly Gly Lys Val Ala Lys His Gly  
 100 105 110  
 Asn Arg Ala Val Ser Gly Lys Ser Gly Ser Ala Asp Leu Leu Glu Ala  
 115 120 125  
 Ala Gly Ile Tyr Leu Glu Leu Thr Ser Glu Gln Val Ala Arg Cys Ile  
 130 135 140  
 Asp Thr Val Gly Val Gly Phe Met Phe Ala Gln Val His His Lys Ala  
 145 150 155 160  
 Met Lys Tyr Ala Ala Gly Pro Arg Arg Glu Leu Gly Leu Arg Thr Leu  
 165 170 175  
 Phe Asn Met Leu Gly Pro Leu Thr Asn Pro Ala Gly Val Arg His Gln  
 180 185 190  
 Val Val Gly Val Phe Thr Gln Glu Leu Cys Lys Pro Leu Ala Glu Val  
 195 200 205  
 Leu Lys Arg Leu Gly Ser Glu His Val Leu Val Val His Ser Arg Asp  
 210 215 220  
 Gly Leu Asp Glu Phe Ser Leu Ala Ala Ala Thr His Ile Ala Glu Leu  
 225 230 235 240  
 Lys Asp Gly Glu Val Arg Glu Tyr Glu Val Arg Pro Glu Asp Phe Gly  
 245 250 255

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Ile Lys Ser Gln Thr Leu Met Gly Leu Glu Val Asp Ser Pro Gln Ala  
 260 265 270

Ser Leu Glu Leu Ile Arg Asp Ala Leu Gly Arg Arg Lys Thr Glu Ala  
 275 280 285

Gly Gln Lys Ala Ala Glu Leu Ile Val Met Asn Ala Gly Pro Ala Leu  
 290 295 300

Tyr Ala Ala Asp Leu Ala Thr Ser Leu His Glu Gly Ile Gln Leu Ala  
 305 310 315 320

His Asp Ala Leu His Thr Gly Leu Ala Arg Glu Lys Met Asp Glu Leu  
 325 330 335

Val Ala Phe Thr Ala Val Tyr Arg Glu Glu Asn Ala Gln  
 340 345

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 <211> 918  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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&lt;210&gt; 4

&lt;211&gt; 305

&lt;212&gt; PRT

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 4

Met Val Asp Lys Leu Thr His Leu Lys Gln Leu Glu Ala Glu Ser Ile  
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His Ile Ile Arg Glu Val Ala Ala Glu Phe Asp Asn Pro Val Met Leu  
 20 25 30

Tyr Ser Ile Gly Lys Asp Ser Ala Val Met Leu His Leu Ala Arg Lys  
 35 40 45

Ala Phe Phe Pro Gly Lys Leu Pro Phe Pro Val Met His Val Asp Thr  
 50 55 60

Arg Trp Lys Phe Gln Glu Met Tyr Arg Phe Arg Asp Arg Met Val Glu  
 65 70 75 80

Glu Met Gly Leu Asp Leu Ile Thr His Val Asn Pro Asp Gly Val Ala  
 85 90 95

Gln Gly Ile Asn Pro Phe Thr His Gly Ser Ala Lys His Thr Asp Val  
 100 105 110

Met Lys Thr Glu Gly Leu Lys Gln Ala Leu Asp Lys Tyr Gly Phe Asp  
 115 120 125

Ala Ala Phe Gly Gly Ala Arg Arg Asp Glu Glu Lys Ser Arg Ala Lys  
 130 135 140

Glu Arg Val Tyr Ser Phe Arg Asp Ser Lys His Arg Trp Asp Pro Lys  
 145 150 155 160

Asn Gln Arg Pro Glu Leu Trp Asn Ile Tyr Asn Gly Lys Val Lys Lys  
 165 170 175

Gly Glu Ser Ile Arg Val Phe Pro Leu Ser Asn Trp Thr Glu Leu Asp  
 180 185 190

Ile Trp Gln Tyr Ile Tyr Leu Glu Gly Ile Pro Ile Val Pro Leu Tyr  
 195 200 205

Phe Ala Ala Glu Arg Glu Val Ile Glu Lys Asn Gly Thr Leu Ile Met  
 210 215 220

Ile Asp Asp Glu Arg Ile Leu Glu His Leu Ser Asp Glu Glu Lys Ala  
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225                      230                      235                      240

Arg Ile Glu Lys Arg Met Val Arg Phe Arg Thr Leu Gly Cys Tyr Pro  
                                  245                      250                      255

Leu Thr Gly Ala Val Glu Ser Ser Ala Thr Thr Leu Pro Glu Ile Ile  
                                  260                      265                      270

Gln Glu Met Leu Leu Thr Arg Thr Ser Glu Arg Gln Gly Arg Val Ile  
                                  275                      280                      285

Asp His Asp Gln Ala Gly Ser Met Glu Glu Lys Lys Arg Gln Gly Tyr  
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Phe  
 305

<210> 5  
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 gccgccgacc tggccgcgca ccatatattg gaggcgggat tgcgggcgct ggcgccggac 180  
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 ccggtgagcg gccgctgcta ctacggtggc gccggtctcg gtgcctggcg cgaggaggcc 420  
 gatggcccg cgcaaccgat cagtgtgcgc ctggagcccg aggaggcctt caccgtggtg 480  
 gccagcaagc gccatggcag cccggcccag gagcgctgc tggatggctt gagcgagcg 540  
 ttcggcgacc tgcggcgagc cagcatcggc agttcgctga agttctgcct gctggccgag 600  
 ggcgctgccg actgctatcc gcgcctgacg ccaacctcgc aatgggacac ggccgccgcc 660  
 caggggtgtg tggaaggcgc cggcggcgag gtgctcgacc tgcattggtg gccattcacc 720  
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 <211> 273  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 6

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 Gly Glu Ala Ile Leu Pro His Trp Arg Ala Asp Val Val Val Arg Ser  
 20 25 30  
 Lys Ala Asp Glu Ser Pro Val Thr Ala Ala Asp Leu Ala Ala His His  
 35 40 45  
 Ile Leu Glu Ala Gly Leu Arg Ala Leu Ala Pro Asp Ile Pro Val Leu  
 50 55 60  
 Ser Glu Glu Asp Cys Glu Ile Pro Leu Ser Glu Arg Gly His Trp Arg  
 65 70 75 80  
 Arg Trp Trp Leu Val Asp Pro Leu Asp Gly Thr Lys Glu Phe Ile Ser  
 85 90 95  
 Gly Ser Glu Glu Phe Thr Val Asn Val Ala Leu Val Glu Asp Gly Arg  
 100 105 110  
 Val Leu Phe Gly Leu Val Gly Val Pro Val Ser Gly Arg Cys Tyr Tyr  
 115 120 125  
 Gly Gly Ala Gly Leu Gly Ala Trp Arg Glu Glu Ala Asp Gly Arg Ala  
 130 135 140  
 Gln Pro Ile Ser Val Arg Leu Glu Pro Glu Glu Ala Phe Thr Val Val  
 145 150 155 160  
 Ala Ser Lys Arg His Gly Ser Pro Ala Gln Glu Arg Leu Leu Asp Gly  
 165 170 175  
 Leu Ser Glu Arg Phe Gly Asp Leu Arg Arg Ala Ser Ile Gly Ser Ser  
 180 185 190  
 Leu Lys Phe Cys Leu Leu Ala Glu Gly Ala Ala Asp Cys Tyr Pro Arg  
 195 200 205  
 Leu Thr Pro Thr Ser Gln Trp Asp Thr Ala Ala Ala Gln Gly Val Leu  
 210 215 220  
 Glu Gly Ala Gly Gly Glu Val Leu Asp Leu His Gly Ala Pro Phe Thr  
 225 230 235 240  
 Tyr Glu Pro Arg Glu Asp Tyr Leu Asn Gly Ser Phe Leu Ala Leu Pro  
 245 250 255

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Arg Ala Ala Glu Trp Arg Ser Glu Leu Ile Gln Leu Ala Arg Ala Leu  
 260 265 270

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 <211> 1299  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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 ccctgaagg ccatgaagtg gctgctggaa aagcacgcgc cgctggccat caagctcacc 240  
 tccgatccca gccagtacgc ctggatgctg cagatgctgc gcaactgcac cgccgagcgc 300  
 tacgccgtga acaaggagcg catggtccgc ctgtccgagt acagccgcga ttgcctcgac 360  
 gaactgcgcg ccgagaccgg catcgcttac gagggccgca ccctcggcac caccctaactg 420  
 ttccgcaccc aggcgcagct ggacgccgcc ggcaaggaca tcgccgtgct cgagcgctcc 480  
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 cagctgttca ccaccgcct ggcggaatg gccaagggcc tgggcgtgga gtccgccttc 660  
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 ggcgaaattgc tcaccgccga ccaactacgtg ctggccctgg gcagctactc gccgcaactg 780  
 ctcaagccgc tgggtatcaa ggctccggtc tatccgctga agggttattc gctgaccgtg 840  
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 <212> PRT  
 <213> Pseudomonas aeruginosa

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&lt;400&gt; 8

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Tyr Tyr Leu Ala Arg Ala Gly Phe Glu Val Val Val Val Asp Arg Gln  
20 25 30

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35 40 45

Pro Gly Tyr Ala Ser Pro Trp Ala Ala Pro Gly Ile Pro Leu Lys Ala  
50 55 60

Met Lys Trp Leu Leu Glu Lys His Ala Pro Leu Ala Ile Lys Leu Thr  
65 70 75 80

Ser Asp Pro Ser Gln Tyr Ala Trp Met Leu Gln Met Leu Arg Asn Cys  
85 90 95

Thr Ala Glu Arg Tyr Ala Val Asn Lys Glu Arg Met Val Arg Leu Ser  
100 105 110

Glu Tyr Ser Arg Asp Cys Leu Asp Glu Leu Arg Ala Glu Thr Gly Ile  
115 120 125

Ala Tyr Glu Gly Arg Thr Leu Gly Thr Thr Gln Leu Phe Arg Thr Gln  
130 135 140

Ala Gln Leu Asp Ala Ala Gly Lys Asp Ile Ala Val Leu Glu Arg Ser  
145 150 155 160

Gly Val Pro Tyr Glu Val Leu Asp Arg Asp Gly Ile Ala Arg Val Glu  
165 170 175

Pro Ala Leu Ala Lys Val Ala Asp Lys Leu Val Gly Ala Leu Arg Leu  
180 185 190

Pro Asn Asp Gln Thr Gly Asp Cys Gln Leu Phe Thr Thr Arg Leu Ala  
195 200 205

Glu Met Ala Lys Gly Leu Gly Val Glu Phe Arg Phe Gly Gln Asn Ile  
210 215 220

Glu Arg Leu Asp Phe Ala Gly Asp Arg Ile Asn Gly Val Leu Val Asn  
225 230 235 240

Gly Glu Leu Leu Thr Ala Asp His Tyr Val Leu Ala Leu Gly Ser Tyr



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245

250

255

Ser Pro Gln Leu Leu Lys Pro Leu Gly Ile Lys Ala Pro Val Tyr Pro  
 260 265 270

Leu Lys Gly Tyr Ser Leu Thr Val Pro Ile Thr Asn Pro Glu Met Ala  
 275 280 285

Pro Thr Ser Thr Ile Leu Asp Glu Thr Tyr Lys Val Ala Ile Thr Arg  
 290 295 300

Phe Asp Gln Arg Ile Arg Val Gly Gly Met Ala Glu Ile Ala Gly Phe  
 305 310 315 320

Asp Leu Ser Leu Asn Pro Arg Arg Arg Glu Thr Leu Glu Met Ile Thr  
 325 330 335

Thr Asp Leu Tyr Pro Glu Gly Gly Asp Ile Ser Gln Ala Thr Phe Trp  
 340 345 350

Thr Gly Leu Arg Pro Ala Thr Pro Asp Gly Thr Pro Ile Val Gly Ala  
 355 360 365

Thr Arg Tyr Arg Asn Leu Phe Leu Asn Thr Gly His Gly Thr Leu Gly  
 370 375 380

Trp Thr Met Ala Cys Gly Ser Gly Arg Tyr Leu Ala Asp Leu Met Ala  
 385 390 395 400

Lys Lys Arg Pro Gln Ile Ser Thr Glu Gly Leu Asp Ile Ser Arg Tyr  
 405 410 415

Ser Asn Ser Pro Glu Asn Ala Lys Asn Ala His Pro Ala Pro Ala His  
 420 425 430

&lt;210&gt; 9

&lt;211&gt; 771

&lt;212&gt; DNA

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 9

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 ggcgggcgcg tacgcagcgt gcaggacatc cgcaacctgt tgaatgccgg cgcggaaca 300  
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caggacggcg tgaagagcgg ttacgacctg ggcgtgaccc gcgccatcag cgaggcgggtg 600
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<213> Pseudomonas aeruginosa

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          20           25           30

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Pro Val Glu Ile Ala Arg Arg Tyr Asp Glu Gln Gly Ala Asp Glu Ile
      35           40           45

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Thr Phe Leu Asp Ile Thr Ala Ser Val Asp Gly Arg Asp Thr Thr Leu
      50           55           60

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His Thr Val Glu Arg Met Ala Ser Gln Val Phe Ile Pro Leu Thr Val
65           70           75           80

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Gly Gly Gly Val Arg Ser Val Gln Asp Ile Arg Asn Leu Leu Asn Ala
      85           90           95

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Gly Ala Asp Lys Val Ser Ile Asn Thr Ala Ala Val Phe Asn Pro Glu
      100           105           110

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Phe Val Gly Glu Ala Ala Asp Arg Phe Gly Ser Gln Cys Ile Val Val
      115           120           125

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Ala Ile Asp Ala Lys Lys Val Ser Ala Pro Gly Glu Ala Pro Arg Trp
      130           135           140

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Glu Ile Phe Thr His Gly Gly Arg Lys Pro Thr Gly Leu Asp Ala Val
145           150           155           160

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Leu Trp Ala Lys Lys Met Glu Asp Leu Gly Ala Gly Glu Ile Leu Leu

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165

170

175

Thr Ser Met Asp Gln Asp Gly Val Lys Ser Gly Tyr Asp Leu Gly Val  
 180 185 190

Thr Arg Ala Ile Ser Glu Ala Val Asn Val Pro Val Ile Ala Ser Gly  
 195 200 205

Gly Val Gly Asn Leu Glu His Leu Ala Ala Gly Ile Leu Glu Gly Lys  
 210 215 220

Ala Asp Ala Val Leu Ala Ala Ser Ile Phe His Phe Gly Glu Tyr Thr  
 225 230 235 240

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 245 250 255

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 aaggctcgccg acatgtaccc gaacctgcga ggctcattatg acgacctgca gttcagcgtg 180  
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 gccctgctcc cctga 1035

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<210> 12  
 <211> 344  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 12

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 20 25 30

Thr Ser Arg Ser Glu Ala Gly Val Lys Val Ala Asp Met Tyr Pro Asn  
 35 40 45

Leu Arg Gly His Tyr Asp Asp Leu Gln Phe Ser Val Pro Asp Ala Gln  
 50 55 60

Arg Leu Gly Ala Cys Asp Val Val Phe Phe Ala Thr Pro His Gly Val  
 65 70 75 80

Ala His Ala Leu Ala Gly Glu Leu Leu Asp Ala Gly Thr Arg Val Ile  
 85 90 95

Asp Leu Ser Ala Asp Phe Arg Leu Ala Asp Ala Glu Glu Trp Ala Arg  
 100 105 110

Trp Tyr Gly Gln Pro His Gly Ala Pro Ala Leu Leu Asp Glu Ala Val  
 115 120 125

Tyr Gly Leu Pro Glu Val Asn Arg Glu Lys Ile Arg Gln Ala Arg Leu  
 130 135 140

Ile Ala Val Pro Gly Cys Tyr Pro Thr Ala Thr Gln Leu Gly Leu Ile  
 145 150 155 160

Pro Leu Leu Glu Ala Gly Leu Ala Asp Ala Ser Arg Leu Ile Ala Asp  
 165 170 175

Cys Lys Ser Gly Val Ser Gly Ala Gly Arg Gly Ala Lys Val Gly Ser  
 180 185 190

Leu Phe Cys Glu Ala Gly Glu Ser Met Met Ala Tyr Ala Val Lys Gly  
 195 200 205

His Arg His Leu Pro Glu Ile Ser Gln Gly Leu Arg Arg Ala Ser Gly  
 210 215 220

## 09743PC.ST25.txt

Gly Asp Val Gly Leu Thr Phe Val Pro His Leu Thr Pro Met Ile Arg  
225 230 235 240

Gly Ile His Ala Thr Leu Tyr Ala His Val Ala Asp Arg Ser Val Asp  
245 250 255

Leu Gln Ala Leu Phe Glu Lys Arg Tyr Ala Asp Glu Pro Phe Val Asp  
260 265 270

Val Met Pro Ala Gly Ser His Pro Glu Thr Arg Ser Val Arg Gly Ala  
275 280 285

Asn Val Cys Arg Ile Ala Val His Arg Pro Gln Gly Gly Asp Leu Val  
290 295 300

Val Val Leu Ser Val Ile Asp Asn Leu Val Lys Gly Ala Ser Gly Gln  
305 310 315 320

Ala Leu Gln Asn Met Asn Ile Leu Phe Gly Leu Asp Glu Arg Leu Gly  
325 330 335

Leu Ser His Ala Ala Leu Leu Pro  
340

<210> 13  
<211> 1644  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 13  
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## 09743PC.ST25.txt

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Leu Lys Glu Gly Asp Glu Ile Leu Glu Leu Glu Val Glu Gly Gly Glu  
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09743PC.ST25.txt

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105

110

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Glu Val Ala Met Thr Arg Leu Met Gln Val Gly Ala Ala Asn Leu His  
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09743PC.ST25.txt

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360

365

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Ile Val Asn Ala Pro Glu Val Ala Ile Leu Gly Val Ser Lys Ala Thr  
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Leu Leu Leu  
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## 09743PC.ST25.txt

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<213> Pseudomonas aeruginosa

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Ser Trp Val Glu Arg Arg Leu Leu Gly Leu Trp Gln Asp Arg Tyr Gly
35           40           45

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Pro Asn Arg Val Gly Pro Phe Gly Ala Phe Gln Leu Gly Ala Asp Met
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Met Ile Phe Thr Leu Ala Pro Val Ile Ala Met Gly Ala Leu Leu Val
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Asn Ile Gly Ile Leu Phe Phe Phe Ala Met Ala Gly Leu Thr Val Tyr

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09743PC.ST25.txt

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120

125

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Arg Asp Ile Val Gln Tyr Gln Ile Asp Asn Val Trp Phe Ile Ile Pro  
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Gln Phe Phe Gly Phe Cys Thr Phe Ile Ile Ala Gly Val Ala Val Thr  
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His Arg His Pro Phe Asp Gln Pro Glu Ala Glu Gln Glu Leu Ala Asp  
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Gly Tyr His Ile Glu Tyr Ala Gly Met Lys Trp Gly Met Phe Phe Val  
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Phe Phe Gly Gly Trp His Gly Pro Phe Leu Asp Thr Leu Pro Trp Leu  
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Ile Leu Ile Arg Ala Ser Leu Pro Arg Pro Arg Tyr Asp Gln Val Met  
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&lt;210&gt; 18

&lt;211&gt; 2448

&lt;212&gt; PRT

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 18

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Met Gln Ala Leu Ile Glu Lys Val Gly Ser Leu Ser Pro Gln Glu Arg
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Lys Ala Leu Ala Val Leu Leu Lys Gln Gln Gly Val Asn Leu Phe Glu

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09743PC.ST25.txt

20

25

30

Ile Ala Pro Val Phe Lys Arg Gln Asp Gly Glu Pro Leu Arg Leu Ser  
 35 40 45

Tyr Ala Gln Glu Arg Gln Trp Phe Leu Trp Gln Leu Glu Pro Glu Ser  
 50 55 60

Ala Ala Tyr His Ile Pro Ser Val Leu Arg Leu Arg Gly Arg Leu Asp  
 65 70 75 80

Leu Asp Ala Leu Gln Arg Ser Phe Asp Ser Leu Val Ala Arg His Glu  
 85 90 95

Thr Leu Arg Thr Arg Phe Arg Leu Asp Gly Asp Glu Ala Arg Gln Glu  
 100 105 110

Ile Ala Ala Ser Met Ala Leu Pro Leu Asp Ile Val Ala Leu Gly Pro  
 115 120 125

Leu Glu Glu Gly Ala Leu Ala Arg Gln Val Glu Thr Thr Ile Ala Arg  
 130 135 140

Pro Phe Asp Leu Glu Arg Gly Pro Leu Leu Arg Val Ser Leu Leu Arg  
 145 150 155 160

Leu Ala Glu Asp Asp His Val Leu Val Leu Val Gln His His Ile Val  
 165 170 175

Ser Asp Gly Trp Ser Met Gln Val Met Val Glu Glu Leu Val Gln Leu  
 180 185 190

Tyr Ala Ala Tyr Ser Arg Gly Leu Glu Val Ala Leu Pro Ala Leu Pro  
 195 200 205

Ile Gln Tyr Ala Asp Tyr Ala Leu Trp Gln Arg Ser Trp Met Glu Ala  
 210 215 220

Gly Glu Lys Glu Arg Gln Leu Ala Tyr Trp Thr Gly Leu Leu Gly Gly  
 225 230 235 240

Glu Gln Pro Val Leu Glu Leu Pro Phe Asp Arg Pro Arg Pro Val Arg  
 245 250 255

Gln Ser His Arg Gly Ala Gln Phe Ile Leu Glu Leu Asp Ile Asp Leu  
 260 265 270

Ser Gln Ala Leu Arg Arg Val Ala Gln Gln Glu Gly Ala Thr Ala Phe

09743PC.ST25.txt

275

280

285

Ala Leu Leu Leu Ala Ser Phe Gln Ala Leu Leu Tyr Arg Tyr Ser Gly  
 290 295 300

Gln Ala Asp Ile Arg Val Gly Val Pro Ile Ala Asn Arg Asn Arg Val  
 305 310 315 320

Glu Thr Glu Arg Leu Ile Gly Phe Phe Val Asn Thr Gln Val Leu Lys  
 325 330 335

Ala Asp Leu Asp Gly Arg Met Gly Phe Asp Glu Leu Leu Ala Gln Ala  
 340 345 350

Arg Gln Arg Ala Leu Glu Ala Gln Ala His Gln Asp Leu Pro Phe Glu  
 355 360 365

Gln Leu Val Glu Ala Leu Gln Pro Glu Arg Ser Leu Ser His Asn Pro  
 370 375 380

Leu Phe Gln Val Leu Phe Asn Tyr Gln Ser Glu Ala Arg Gly Asn Gly  
 385 390 395 400

Gln Ala Phe Arg Phe Asp Glu Leu Gln Met Glu Ser Val Gln Phe Asp  
 405 410 415

Ser Arg Thr Ala Gln Phe Asp Leu Thr Leu Asp Leu Thr Asp Glu Glu  
 420 425 430

Gln Arg Phe Cys Ala Val Phe Asp Tyr Ala Thr Asp Leu Phe Asp Ala  
 435 440 445

Ser Thr Val Glu Arg Leu Ala Gly His Trp Arg Asn Leu Leu Arg Gly  
 450 455 460

Ile Val Ala Asn Pro Arg Gln Arg Leu Gly Glu Leu Pro Leu Leu Asp  
 465 470 475 480

Ala Pro Glu Arg Arg Gln Thr Leu Ser Glu Trp Asn Pro Ala Gln Arg  
 485 490 495

Glu Cys Ala Val Gln Gly Thr Leu Gln Gln Arg Phe Glu Glu Gln Ala  
 500 505 510

Arg Gln Arg Pro Gln Ala Val Ala Leu Ile Leu Asp Glu Gln Arg Leu  
 515 520 525

Ser Tyr Gly Glu Leu Asn Ala Arg Ala Asn Arg Leu Ala His Cys Leu



09743PC.ST25.txt

530

535

540

Ile Ala Arg Gly Val Gly Ala Asp Val Pro Val Gly Leu Ala Leu Glu  
 545 550 555 560

Arg Ser Leu Asp Met Leu Val Gly Leu Leu Ala Ile Leu Lys Ala Gly  
 565 570 575

Gly Ala Tyr Leu Pro Leu Asp Pro Ala Ala Pro Glu Glu Arg Leu Ala  
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His Ile Leu Asp Asp Ser Gly Val Arg Leu Leu Leu Thr Gln Gly His  
 595 600 605

Leu Leu Glu Arg Leu Pro Arg Gln Ala Gly Val Glu Val Leu Ala Ile  
 610 615 620

Asp Gly Leu Val Leu Asp Gly Tyr Ala Glu Ser Asp Pro Leu Pro Thr  
 625 630 635 640

Leu Ser Ala Asp Asn Leu Ala Tyr Val Ile Tyr Thr Ser Gly Ser Thr  
 645 650 655

Gly Lys Pro Lys Gly Thr Leu Leu Thr His Arg Asn Ala Leu Arg Leu  
 660 665 670

Phe Ser Ala Thr Glu Ala Trp Phe Gly Phe Asp Glu Arg Asp Val Trp  
 675 680 685

Thr Leu Phe His Ser Tyr Ala Phe Asp Phe Ser Val Trp Glu Ile Phe  
 690 695 700

Gly Ala Leu Leu Tyr Gly Gly Cys Leu Val Ile Val Pro Gln Trp Val  
 705 710 715 720

Ser Arg Ser Pro Glu Asp Phe Tyr Arg Leu Leu Cys Arg Glu Gly Val  
 725 730 735

Thr Val Leu Asn Gln Thr Pro Ser Ala Phe Lys Gln Leu Met Ala Val  
 740 745 750

Ala Cys Ser Ala Asp Met Ala Thr Gln Gln Pro Ala Leu Arg Tyr Val  
 755 760 765

Ile Phe Gly Gly Glu Ala Leu Asp Leu Gln Ser Leu Arg Pro Trp Phe  
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Gln Arg Phe Gly Asp Arg Gln Pro Gln Leu Val Asn Met Tyr Gly Ile

09743PC.ST25.txt

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                                  820                      825                      830  
 Ser Trp Tyr Ile Leu Asp Arg Asp Leu Asn Pro Val Pro Arg Gly Ala  
                                  835                      840                      845  
 Val Gly Glu Leu Tyr Ile Gly Arg Ala Gly Leu Ala Arg Gly Tyr Leu  
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 Arg Arg Pro Gly Leu Ser Ala Thr Arg Phe Val Pro Asn Pro Phe Pro  
                                  865                      870                      875                      880  
 Gly Gly Ala Gly Glu Arg Leu Tyr Arg Thr Gly Asp Leu Ala Arg Phe  
                                  885                      890                      895  
 Gln Ala Asp Gly Asn Ile Glu Tyr Ile Gly Arg Ile Asp His Gln Val  
                                  900                      905                      910  
 Lys Val Arg Gly Phe Arg Ile Glu Leu Gly Glu Ile Glu Ala Ala Leu  
                                  915                      920                      925  
 Ala Gly Leu Ala Gly Val Arg Asp Ala Val Val Leu Ala His Asp Gly  
                                  930                      935                      940  
 Val Gly Gly Thr Gln Leu Val Gly Tyr Val Val Ala Asp Ser Ala Glu  
                                  945                      950                      955                      960  
 Asp Ala Glu Arg Leu Arg Glu Ser Leu Arg Glu Ser Leu Lys Arg His  
                                  965                      970                      975  
 Leu Pro Asp Tyr Met Val Pro Ala His Leu Met Leu Leu Glu Arg Met  
                                  980                      985                      990  
 Pro Leu Thr Val Asn Gly Lys Leu Asp Arg Gln Ala Leu Pro Gln Pro  
                                  995                      1000                      1005  
 Asp Ala Ser Leu Ser Gln Gln Ala Tyr Arg Ala Pro Gly Ser Glu  
                                  1010                      1015                      1020  
 Leu Glu Gln Arg Ile Ala Ala Ile Trp Ser Glu Ile Leu Gly Val  
                                  1025                      1030                      1035  
 Glu Arg Val Gly Leu Asp Asp Asn Phe Phe Glu Leu Gly Gly His

09743PC.ST25.txt

1040		1045		1050	
Ser Leu Leu Ala Thr Arg Val	Ile Ser Arg Val Arg	Gln Glu Gln			
1055	1060	1065			
Gln Leu Asp Ala Ser Leu Lys	Ala Leu Phe Glu Arg	Pro Val Leu			
1070	1075	1080			
Glu Ala Phe Ala Gln Gly Leu	Glu Arg Thr Thr Asp	Ala Val Ser			
1085	1090	1095			
Thr Ile Pro Leu Ala Asp Arg	Gln Gln Pro Leu Ala	Leu Ser Phe			
1100	1105	1110			
Ala Gln Glu Arg Gln Trp Phe	Leu Trp Gln Leu Glu	Pro Glu Ser			
1115	1120	1125			
Ala Ala Tyr His Ile Pro Ser	Ala Leu Arg Leu Arg	Gly Arg Leu			
1130	1135	1140			
Asp Val Asp Ala Leu Gln Arg	Ser Phe Asp Ser Leu	Val Ala Arg			
1145	1150	1155			
His Glu Thr Leu Arg Thr Arg	Phe Arg Leu Glu Gly	Gly Arg Ser			
1160	1165	1170			
Tyr Gln Gln Val Gln Pro Ala	Val Ser Val Ser Ile	Glu Arg Glu			
1175	1180	1185			
Gln Phe Gly Glu Glu Gly Leu	Ile Glu Arg Ile Gln	Ala Ile Val			
1190	1195	1200			
Val Gln Pro Phe Asp Leu Glu	Arg Gly Pro Leu Leu	Arg Val Asn			
1205	1210	1215			
Leu Leu Gln Leu Ala Glu Asp	Asp His Val Leu Val	Leu Val Gln			
1220	1225	1230			
His His Ile Val Ser Asp Gly	Trp Ser Met Gln Val	Met Val Glu			
1235	1240	1245			
Glu Leu Val Gln Leu Tyr Ala	Ala Tyr Ser Gln Gly	Leu Asp Val			
1250	1255	1260			
Val Leu Pro Ala Leu Pro Ile	Gln Tyr Ala Asp Tyr	Ala Leu Trp			
1265	1270	1275			
Gln Arg Ser Trp Met Glu Ala	Gly Glu Lys Glu Arg	Gln Leu Ala			

09743PC.ST25.txt

1280		1285		1290
Tyr Trp Thr Gly Leu Leu Gly Gly Glu Gln Pro Val Leu Glu Leu				
1295		1300		1305
Pro Phe Asp Arg Pro Arg Pro Ala Arg Gln Ser His Arg Gly Ala				
1310		1315		1320
Gln Leu Gly Phe Glu Leu Ser Arg Glu Leu Val Glu Ala Val Arg				
1325		1330		1335
Ala Leu Ala Gln Arg Glu Gly Ala Ser Ser Phe Met Leu Leu Leu				
1340		1345		1350
Ala Ser Phe Gln Ala Leu Leu Tyr Arg Tyr Ser Gly Gln Ala Asp				
1355		1360		1365
Ile Arg Val Gly Val Pro Ile Ala Asn Arg Asn Arg Val Glu Thr				
1370		1375		1380
Glu Arg Leu Ile Gly Phe Phe Val Asn Thr Gln Val Leu Lys Ala				
1385		1390		1395
Asp Leu Asp Gly Arg Met Gly Phe Asp Glu Leu Leu Ala Gln Ala				
1400		1405		1410
Arg Gln Arg Ala Leu Glu Ala Gln Ala His Gln Asp Leu Pro Phe				
1415		1420		1425
Glu Gln Leu Val Glu Ala Leu Gln Pro Glu Arg Asn Ala Ser His				
1430		1435		1440
Asn Pro Leu Phe Gln Val Leu Phe Asn His Gln Ser Glu Ile Arg				
1445		1450		1455
Ser Val Thr Pro Glu Val Gln Leu Glu Asp Leu Arg Leu Glu Gly				
1460		1465		1470
Leu Ala Trp Asp Gly Gln Thr Ala Gln Phe Asp Leu Thr Leu Asp				
1475		1480		1485
Ile Gln Glu Asp Glu Asn Gly Ile Trp Ala Ser Phe Asp Tyr Ala				
1490		1495		1500
Thr Asp Leu Phe Asp Ala Ser Thr Val Glu Arg Leu Ala Gly His				
1505		1510		1515
Trp Arg Asn Leu Leu Arg Gly Ile Val Ala Asn Pro Arg Gln Arg				

09743PC.ST25.txt

1520                      1525                      1530  
 Leu Gly Glu Leu Pro Leu Leu Asp Ala Pro Glu Arg Arg Gln Thr  
 1535                      1540                      1545  
 Leu Ser Glu Trp Asn Pro Ala Gln Arg Glu Cys Ala Val Gln Gly  
 1550                      1555                      1560  
 Thr Leu Gln Gln Arg Phe Glu Glu Gln Ala Arg Gln Arg Pro Gln  
 1565                      1570                      1575  
 Ala Val Ala Leu Ile Leu Asp Glu Gln Arg Leu Ser Tyr Gly Glu  
 1580                      1585                      1590  
 Leu Asn Ala Arg Ala Asn Arg Leu Ala His Cys Leu Ile Ala Arg  
 1595                      1600                      1605  
 Gly Val Gly Ala Asp Val Pro Val Gly Leu Ala Leu Glu Arg Ser  
 1610                      1615                      1620  
 Leu Asp Met Leu Val Gly Leu Leu Ala Ile Leu Lys Ala Gly Gly  
 1625                      1630                      1635  
 Ala Tyr Leu Pro Leu Asp Pro Ala Ala Pro Glu Glu Arg Leu Ala  
 1640                      1645                      1650  
 His Ile Leu Asp Asp Ser Gly Val Arg Leu Leu Leu Thr Gln Gly  
 1655                      1660                      1665  
 His Leu Leu Glu Arg Leu Pro Arg Gln Ala Gly Val Glu Val Leu  
 1670                      1675                      1680  
 Ala Ile Asp Gly Leu Val Leu Asp Gly Tyr Ala Glu Ser Asp Pro  
 1685                      1690                      1695  
 Leu Pro Thr Leu Ser Ala Asp Asn Leu Ala Tyr Val Ile Tyr Thr  
 1700                      1705                      1710  
 Ser Gly Ser Thr Gly Lys Pro Lys Gly Thr Leu Leu Thr His Arg  
 1715                      1720                      1725  
 Asn Ala Leu Arg Leu Phe Ser Ala Thr Glu Ala Trp Phe Gly Phe  
 1730                      1735                      1740  
 Asp Glu Arg Asp Val Trp Thr Leu Phe His Ser Tyr Ala Phe Asp  
 1745                      1750                      1755  
 Phe Ser Val Trp Glu Ile Phe Gly Ala Leu Leu Tyr Gly Gly Arg

09743PC.ST25.txt

1760 1765 1770  
 Leu Val Ile Val Pro Gln Trp Val Ser Arg Ser Pro Glu Asp Phe  
 1775 1780 1785  
 Tyr Arg Leu Leu Cys Arg Glu Gly Val Thr Val Leu Asn Gln Thr  
 1790 1795 1800  
 Pro Ser Ala Phe Lys Gln Leu Met Ala Val Ala Cys Ser Ala Asp  
 1805 1810 1815  
 Met Ala Thr Gln Gln Pro Ala Leu Arg Tyr Val Ile Phe Gly Gly  
 1820 1825 1830  
 Glu Ala Leu Asp Leu Gln Ser Leu Arg Pro Trp Phe Gln Arg Phe  
 1835 1840 1845  
 Gly Asp Arg Gln Pro Gln Leu Val Asn Met Tyr Gly Ile Thr Glu  
 1850 1855 1860  
 Thr Thr Val His Val Thr Tyr Arg Pro Val Ser Glu Ala Asp Leu  
 1865 1870 1875  
 Lys Gly Gly Leu Val Ser Pro Ile Gly Gly Thr Ile Pro Asp Leu  
 1880 1885 1890  
 Ser Trp Tyr Ile Leu Asp Arg Asp Leu Asn Pro Val Pro Arg Gly  
 1895 1900 1905  
 Ala Val Gly Glu Leu Tyr Ile Gly Arg Ala Gly Leu Ala Arg Gly  
 1910 1915 1920  
 Tyr Leu Arg Arg Pro Gly Leu Ser Ala Thr Arg Phe Val Pro Asn  
 1925 1930 1935  
 Pro Phe Pro Gly Gly Ala Gly Glu Arg Leu Tyr Arg Thr Gly Asp  
 1940 1945 1950  
 Leu Ala Arg Phe Gln Ala Asp Gly Asn Ile Glu Tyr Ile Gly Arg  
 1955 1960 1965  
 Ile Asp His Gln Val Lys Val Arg Gly Phe Arg Ile Glu Leu Gly  
 1970 1975 1980  
 Glu Ile Glu Ala Ala Leu Ala Gly Leu Ala Gly Val Arg Asp Ala  
 1985 1990 1995  
 Val Val Leu Ala His Asp Gly Val Gly Gly Thr Gln Leu Val Gly

09743PC.ST25.txt

2000

2005

2010

Tyr Val Val Ala Asp Ser Ala Glu Asp Ala Glu Arg Leu Arg Glu  
 2015 2020 2025  
 Ser Leu Arg Glu Ser Leu Lys Arg His Leu Pro Asp Tyr Met Val  
 2030 2035 2040  
 Pro Ala His Leu Met Leu Leu Glu Arg Met Pro Leu Thr Val Asn  
 2045 2050 2055  
 Gly Lys Leu Asp Arg Gln Ala Leu Pro Gln Pro Asp Ala Ser Leu  
 2060 2065 2070  
 Ser Gln Gln Ala Tyr Arg Ala Pro Gly Ser Glu Leu Glu Gln Arg  
 2075 2080 2085  
 Ile Ala Ala Ile Trp Ala Glu Ile Leu Gly Val Glu Arg Val Gly  
 2090 2095 2100  
 Leu Asp Asp Asn Phe Phe Glu Leu Gly Gly His Ser Leu Leu Leu  
 2105 2110 2115  
 Leu Met Leu Lys Glu Arg Ile Gly Asp Thr Cys Gln Ala Thr Leu  
 2120 2125 2130  
 Ser Ile Ser Gln Leu Met Thr His Ala Ser Val Ala Glu Gln Ala  
 2135 2140 2145  
 Ala Cys Ile Glu Gly Gln Ala Arg Glu Ser Leu Leu Val Pro Leu  
 2150 2155 2160  
 Asn Gly Arg Arg Glu Gly Ser Pro Leu Phe Met Phe His Pro Ser  
 2165 2170 2175  
 Phe Gly Ser Val His Cys Tyr Lys Thr Leu Ala Met Ala Leu Arg  
 2180 2185 2190  
 Asp Arg His Pro Val Lys Gly Val Val Cys Arg Ala Leu Leu Gly  
 2195 2200 2205  
 Ala Gly Arg Glu Val Pro Glu Trp Asp Asp Met Val Ala Glu Tyr  
 2210 2215 2220  
 Ala Glu Gln Leu Leu Gln Glu His Pro Glu Gly Val Phe Asn Leu  
 2225 2230 2235  
 Ala Gly Trp Ser Leu Gly Gly Asn Leu Ala Met Asp Val Ala Ala

09743PC.ST25.txt

2240

2245

2250

Arg Leu Glu Gln Arg Gly Arg Gln Val Ala Phe Val Gly Trp Ile  
 2255 2260 2265  
 Asp Ala Pro Ala Pro Val Arg Val Glu Ala Phe Trp Asn Glu Ile  
 2270 2275 2280  
 Gly Pro Thr Pro Glu Ala Val Pro Asn Leu Ser Val Gly Glu Met  
 2285 2290 2295  
 Arg Val Glu Leu Leu Gly Val Met Phe Pro Glu Arg Ala Glu His  
 2300 2305 2310  
 Ile Glu Arg Ala Trp Ser Ser Ile Cys Ser Ala Thr Thr Asp Asp  
 2315 2320 2325  
 Glu Gln Arg Trp Thr Arg Met Ser Asp Trp Ala Glu Ala Glu Ile  
 2330 2335 2340  
 Gly Ala Glu Phe Ala Thr Leu Arg Ser Glu Ile Ala Gln Ser Asn  
 2345 2350 2355  
 Glu Leu Glu Val Ser Trp Glu Leu Lys Gln Ile Leu Asp Glu Arg  
 2360 2365 2370  
 Leu Lys Ala Met Asp Tyr Pro Arg Leu Thr Ala Lys Val Ser Leu  
 2375 2380 2385  
 Trp Trp Ala Ala Arg Ser Thr Asn Ala Ile Gln Arg Ser Ala Val  
 2390 2395 2400  
 Glu Arg Ser Met Ala Glu Ala Ile Gly Ala Glu Arg Val Glu Pro  
 2405 2410 2415  
 Val Arg Val Leu Asp Thr Arg His Asp Lys Ile Ile Asp His Pro  
 2420 2425 2430  
 Glu Phe Val Gln Ser Phe Arg Ala Ala Leu Glu Arg Ala Gly Arg  
 2435 2440 2445

&lt;210&gt; 19

&lt;211&gt; 3132

&lt;212&gt; DNA

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 19

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## 09743PC.ST25.txt

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## 09743PC.ST25.txt

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gccgggggagt ga 3132

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 <211> 1043  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 20

Met Ser Glu Phe Phe Ile Lys Arg Pro Asn Phe Ala Trp Val Val Ala  
 1 5 10 15

Leu Phe Ile Ser Leu Ala Gly Leu Leu Val Ile Ser Lys Leu Pro Val  
 20 25 30

Ala Gln Tyr Pro Asn Val Ala Pro Pro Gln Ile Thr Ile Thr Ala Thr  
 35 40 45

Tyr Pro Gly Ala Ser Ala Lys Val Leu Val Asp Ser Val Thr Ser Val  
 50 55 60

Leu Glu Glu Ser Leu Asn Gly Ala Lys Gly Leu Leu Tyr Phe Glu Ser  
 Page 34

09743PC.ST25.txt

65                      70                      75                      80  
 Thr Asn Asn Ser Asn Gly Thr Ala Glu Ile Val Val Thr Phe Glu Pro  
                                  85                      90                      95  
 Gly Thr Asp Pro Asp Leu Ala Gln Val Asp Val Gln Asn Arg Leu Lys  
                                  100                      105                      110  
 Lys Ala Glu Ala Arg Met Pro Gln Ala Val Leu Thr Gln Gly Leu Gln  
                                  115                      120                      125  
 Val Glu Gln Thr Ser Ala Gly Phe Leu Leu Ile Tyr Ala Leu Ser Tyr  
                                  130                      135                      140  
 Lys Glu Gly Ala Gln Arg Ser Asp Thr Thr Ala Leu Gly Asp Tyr Ala  
                                  145                      150                      155                      160  
 Ala Arg Asn Ile Asn Asn Glu Leu Arg Arg Leu Pro Gly Val Gly Lys  
                                  165                      170                      175  
 Leu Gln Phe Phe Ser Ser Glu Ala Ala Met Arg Val Trp Ile Asp Pro  
                                  180                      185                      190  
 Gln Lys Leu Val Gly Phe Gly Leu Ser Ile Asp Asp Val Ser Asn Ala  
                                  195                      200                      205  
 Ile Arg Gly Gln Asn Val Gln Val Pro Ala Gly Ala Phe Gly Ser Ala  
                                  210                      215                      220  
 Pro Gly Ser Ser Ala Gln Glu Leu Thr Ala Thr Leu Ala Val Lys Gly  
                                  225                      230                      235                      240  
 Thr Leu Asp Asp Pro Gln Glu Phe Gly Gln Val Val Leu Arg Ala Asn  
                                  245                      250                      255  
 Glu Asp Gly Ser Leu Val Arg Leu Ala Asp Val Ala Arg Leu Glu Leu  
                                  260                      265                      270  
 Gly Lys Glu Ser Tyr Asn Ile Ser Ser Arg Leu Asn Gly Thr Pro Thr  
                                  275                      280                      285  
 Val Gly Gly Ala Ile Gln Leu Ser Pro Gly Ala Asn Ala Ile Gln Thr  
                                  290                      295                      300  
 Ala Thr Leu Val Lys Gln Arg Leu Ala Glu Leu Ser Ala Phe Phe Pro  
                                  305                      310                      315                      320  
 Glu Asp Met Gln Tyr Ser Val Pro Tyr Asp Thr Ser Arg Phe Val Asp

09743PC.ST25.txt

325

330

335

Val Ala Ile Glu Lys Val Ile His Thr Leu Ile Glu Ala Met Val Leu  
 340 345 350

Val Phe Leu Val Met Phe Leu Phe Leu Gln Asn Val Arg Tyr Thr Leu  
 355 360 365

Ile Pro Ser Ile Val Val Pro Val Cys Leu Leu Gly Thr Leu Met Val  
 370 375 380

Met Tyr Leu Leu Gly Phe Ser Val Asn Met Met Thr Met Phe Gly Met  
 385 390 395 400

Val Leu Ala Ile Gly Ile Leu Val Asp Asp Ala Ile Val Val Val Glu  
 405 410 415

Asn Val Glu Arg Ile Met Ala Glu Glu Gly Ile Ser Pro Ala Glu Ala  
 420 425 430

Thr Val Lys Ala Met Lys Gln Val Ser Gly Ala Ile Val Gly Ile Thr  
 435 440 445

Leu Val Leu Ser Ala Val Phe Leu Pro Leu Ala Phe Met Ala Gly Ser  
 450 455 460

Val Gly Val Ile Tyr Gln Gln Phe Ser Val Ser Leu Ala Val Ser Ile  
 465 470 475 480

Leu Phe Ser Gly Phe Leu Ala Leu Thr Phe Thr Pro Ala Leu Cys Ala  
 485 490 495

Thr Leu Leu Lys Pro Ile Pro Glu Gly His His Glu Lys Arg Gly Phe  
 500 505 510

Phe Gly Ala Phe Asn Arg Gly Phe Ala Arg Val Thr Glu Arg Tyr Ser  
 515 520 525

Leu Leu Asn Ser Lys Leu Val Ala Arg Ala Gly Arg Phe Met Leu Val  
 530 535 540

Tyr Ala Gly Leu Val Ala Met Leu Gly Tyr Phe Tyr Leu Arg Leu Pro  
 545 550 555 560

Glu Ala Phe Val Pro Ala Glu Asp Leu Gly Tyr Met Val Val Asp Val  
 565 570 575

Gln Leu Pro Pro Gly Ala Ser Arg Val Arg Thr Asp Ala Thr Gly Glu

09743PC.ST25.txt

580

585

590

Glu Leu Glu Arg Phe Leu Lys Ser Arg Glu Ala Val Ala Ser Val Phe  
 595 600 605

Leu Ile Ser Gly Phe Ser Phe Ser Gly Gln Gly Asp Asn Ala Ala Leu  
 610 615 620

Ala Phe Pro Thr Phe Lys Asp Trp Ser Glu Arg Gly Ala Glu Gln Ser  
 625 630 635 640

Ala Ala Ala Glu Ile Ala Ala Leu Asn Glu His Phe Ala Leu Pro Asp  
 645 650 655

Asp Gly Thr Val Met Ala Val Ser Pro Pro Pro Ile Asn Gly Leu Gly  
 660 665 670

Asn Ser Gly Gly Phe Ala Leu Arg Leu Met Asp Arg Ser Gly Val Gly  
 675 680 685

Arg Glu Ala Leu Leu Gln Ala Arg Asp Thr Leu Leu Gly Glu Ile Gln  
 690 695 700

Thr Asn Pro Lys Phe Leu Tyr Ala Met Met Glu Gly Leu Ala Glu Ala  
 705 710 715 720

Pro Gln Leu Arg Leu Leu Ile Asp Arg Glu Lys Ala Arg Ala Leu Gly  
 725 730 735

Val Ser Phe Glu Thr Ile Ser Gly Thr Leu Ser Ala Ala Phe Gly Ser  
 740 745 750

Glu Val Ile Asn Asp Phe Thr Asn Ala Gly Arg Gln Gln Arg Val Val  
 755 760 765

Ile Gln Ala Glu Gln Gly Asn Arg Met Thr Pro Glu Ser Val Leu Glu  
 770 775 780

Leu Tyr Val Pro Asn Ala Ala Gly Asn Leu Val Pro Leu Ser Ala Phe  
 785 790 795 800

Val Ser Val Lys Trp Glu Glu Gly Pro Val Gln Leu Val Arg Tyr Asn  
 805 810 815

Gly Tyr Pro Ser Ile Arg Ile Val Gly Asp Ala Ala Pro Gly Phe Ser  
 820 825 830

Thr Gly Glu Ala Met Ala Glu Met Glu Arg Leu Ala Ser Gln Leu Pro

09743PC.ST25.txt

835

840

845

Ala Gly Ile Gly Tyr Glu Trp Thr Gly Leu Ser Tyr Gln Glu Lys Val  
 850 855 860

Ser Ala Gly Gln Ala Thr Ser Leu Phe Ala Leu Ala Ile Leu Val Val  
 865 870 875 880

Phe Leu Leu Leu Val Ala Leu Tyr Glu Ser Trp Ser Ile Pro Leu Ser  
 885 890 895

Val Met Leu Ile Val Pro Ile Gly Ala Ile Gly Ala Val Leu Ala Val  
 900 905 910

Met Val Ser Gly Met Ser Asn Asp Val Tyr Phe Lys Val Gly Leu Ile  
 915 920 925

Thr Ile Ile Gly Leu Ser Ala Lys Asn Ala Ile Leu Ile Val Glu Phe  
 930 935 940

Ala Lys Glu Leu Trp Glu Gln Gly His Ser Leu Arg Asp Ala Ala Ile  
 945 950 955 960

Glu Ala Ala Arg Leu Arg Phe Arg Pro Ile Ile Met Thr Ser Met Ala  
 965 970 975

Phe Ile Leu Gly Val Ile Pro Leu Ala Leu Ala Ser Gly Ala Gly Ala  
 980 985 990

Ala Ser Gln Arg Ala Ile Gly Thr Gly Val Ile Gly Gly Met Leu Ser  
 995 1000 1005

Ala Thr Phe Leu Gly Val Leu Phe Val Pro Ile Cys Phe Val Trp  
 1010 1015 1020

Leu Leu Ser Leu Leu Arg Ser Lys Pro Ala Pro Ile Glu Gln Ala  
 1025 1030 1035

Ala Ser Ala Gly Glu  
 1040

&lt;210&gt; 21

&lt;211&gt; 642

&lt;212&gt; DNA

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 21

atgaacgatg cttctccccg tctgaccgaa cgcgccagc aacgccgccg cgccatgctc 60

gacgccgcta cccaggcctt tctcgaacac ggtttcgaag gcaccaccct ggacatgggtg 120

## 09743PC.ST25.txt

```

atagaacggg cgggtggttc acgggggacc ctgtacagct ccttcggcgg caaggagggc 180
ctgttcgccc cggatgatgc ccacatgatc ggggaaatct tcgacgacag cgccgatcag 240
ccgcgccccg ccgccacgct gagcgccacc ctcgagcatt tcggccggcg ctttctcacc 300
agcctgctcg atccccgctg ccagagcctc tatcgcttgg tggtagcgga atccccgcgg 360
tttccggcga tcggcaagtc cttctacgag cagggggccgc agcagagcta tctgctgctc 420
agcgagcgac tggccgcggt cgctcctcac atggacgagg aaacgctcta cgcggtggcc 480
tgccagtttc tcgagatgct caaggccgac ctgttcctca aggccctcag cgtggccgac 540
ttccagccga ccatggcgct gctggaaacc cgcctcaagc tgcggtgga catcatcgcc 600
tgctacctgg aacacctgtc gcagagcccc gcgcagggtc ga 642

```

<210> 22  
 <211> 213  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 22

```

Met Asn Asp Ala Ser Pro Arg Leu Thr Glu Arg Gly Arg Gln Arg Arg
1           5           10           15

```

```

Arg Ala Met Leu Asp Ala Ala Thr Gln Ala Phe Leu Glu His Gly Phe
          20           25           30

```

```

Glu Gly Thr Thr Leu Asp Met Val Ile Glu Arg Ala Gly Gly Ser Arg
35           40           45

```

```

Gly Thr Leu Tyr Ser Ser Phe Gly Gly Lys Glu Gly Leu Phe Ala Ala
50           55           60

```

```

Val Ile Ala His Met Ile Gly Glu Ile Phe Asp Asp Ser Ala Asp Gln
65           70           75           80

```

```

Pro Arg Pro Ala Ala Thr Leu Ser Ala Thr Leu Glu His Phe Gly Arg
          85           90           95

```

```

Arg Phe Leu Thr Ser Leu Leu Asp Pro Arg Cys Gln Ser Leu Tyr Arg
100           105           110

```

```

Leu Val Val Ala Glu Ser Pro Arg Phe Pro Ala Ile Gly Lys Ser Phe
115           120           125

```

```

Tyr Glu Gln Gly Pro Gln Gln Ser Tyr Leu Leu Leu Ser Glu Arg Leu
130           135           140

```

```

Ala Ala Val Ala Pro His Met Asp Glu Glu Thr Leu Tyr Ala Val Ala

```

09743PC.ST25.txt

145                      150                      155                      160

Cys Gln Phe Leu Glu Met Leu Lys Ala Asp Leu Phe Leu Lys Ala Leu  
                                  165                      170                      175

Ser Val Ala Asp Phe Gln Pro Thr Met Ala Leu Leu Glu Thr Arg Leu  
                                  180                      185                      190

Lys Leu Ser Val Asp Ile Ile Ala Cys Tyr Leu Glu His Leu Ser Gln  
                                  195                      200                      205

Ser Pro Ala Gln Gly  
                                  210

<210> 23  
 <211> 1017  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 23  
 atgtctgatg atgcccgttt ccagcagctg aattgctggt tggactcttg tttgcccagag 60  
 ttgttcgttg ccgaagggtg gggggaagtg cccccgccg aactgatccc ggccagtagc 120  
 gacgccagct tccgtcggtta tttccgctgg cagggagggg accgcagcct ggtgggtgatg 180  
 gacgcgcccgc cgcccagga agactgccga ccgttcgtca aggtcgccgg actgctcgcc 240  
 ggagccggcg tgcattgtgcc gaggattctc gccaggacc tggagaacgg tttcctgctg 300  
 ctcatgtacc tgggcccggca gacctacctc gacgtgcttc atcccgggaa tgccgacgag 360  
 ctgttcgaac cgcccttga tgcgtgatc gccttcaga aggtcgatgt cgccggtgtc 420  
 ctgcctgcct acgacgaagc ggtgctgcgc cgcgagctgc agctgttccc cgactggtac 480  
 ctggcccgc accctggcgt ggagctggag ggcgagacgc tggcccgtg gaaacggatc 540  
 tgcgacctgc tggtagcgag cgcgctggag caaccgcggg tgttcgtcca tcgcgactat 600  
 atgccgcgca atctgatgct cagcgagccc aaccggggcg tcctcgactt ccaggacgcc 660  
 ctgcacggcc cggtcaccta cgatgtcacc tgctgtaca aggacgcctt cgtcagttgg 720  
 ccggagccgc gcgtgcatgc cgcgctgaac cgttactgga agaaggcgac ctgggcccgc 780  
 atcccgtgc cgccaagctt cgaagacttc ctccgtgcca gcgacctgat gggcgtgcag 840  
 cgccacctga aggtgattgg catcttcgcc cgtatctgtc accgcgacgg caagccgcgc 900  
 tacctgggtg acgtgccgcg cttcttcctg tatctggaaa ccgccgtggc gcgccgtccc 960  
 gagctggccg aactgggcga gctgctggcc tcgctgccgc agggagccga ggcata 1017

<210> 24  
 <211> 338  
 <212> PRT  
 <213> Pseudomonas aeruginosa



09743PC.ST25.txt

&lt;400&gt; 24

Met Ser Asp Asp Ala Arg Phe Gln Gln Leu Asn Cys Trp Leu Asp Ser  
 1 5 10 15

Cys Leu Pro Glu Leu Phe Val Ala Glu Gly Trp Gly Glu Val Pro Pro  
 20 25 30

Ala Glu Leu Ile Pro Ala Ser Ser Asp Ala Ser Phe Arg Arg Tyr Phe  
 35 40 45

Arg Trp Gln Gly Gly Asp Arg Ser Leu Val Val Met Asp Ala Pro Pro  
 50 55 60

Pro Gln Glu Asp Cys Arg Pro Phe Val Lys Val Ala Gly Leu Leu Ala  
 65 70 75 80

Gly Ala Gly Val His Val Pro Arg Ile Leu Ala Gln Asp Leu Glu Asn  
 85 90 95

Gly Phe Leu Leu Leu Ser Asp Leu Gly Arg Gln Thr Tyr Leu Asp Val  
 100 105 110

Leu His Pro Gly Asn Ala Asp Glu Leu Phe Glu Pro Ala Leu Asp Ala  
 115 120 125

Leu Ile Ala Phe Gln Lys Val Asp Val Ala Gly Val Leu Pro Ala Tyr  
 130 135 140

Asp Glu Ala Val Leu Arg Arg Glu Leu Gln Leu Phe Pro Asp Trp Tyr  
 145 150 155 160

Leu Ala Arg His Leu Gly Val Glu Leu Glu Gly Glu Thr Leu Ala Arg  
 165 170 175

Trp Lys Arg Ile Cys Asp Leu Leu Val Arg Ser Ala Leu Glu Gln Pro  
 180 185 190

Arg Val Phe Val His Arg Asp Tyr Met Pro Arg Asn Leu Met Leu Ser  
 195 200 205

Glu Pro Asn Pro Gly Val Leu Asp Phe Gln Asp Ala Leu His Gly Pro  
 210 215 220

Val Thr Tyr Asp Val Thr Cys Leu Tyr Lys Asp Ala Phe Val Ser Trp  
 225 230 235 240

Pro Glu Pro Arg Val His Ala Ala Leu Asn Arg Tyr Trp Lys Lys Ala

09743PC.ST25.txt

245

250

255

Thr Trp Ala Gly Ile Pro Leu Pro Pro Ser Phe Glu Asp Phe Leu Arg  
 260 265 270

Ala Ser Asp Leu Met Gly Val Gln Arg His Leu Lys Val Ile Gly Ile  
 275 280 285

Phe Ala Arg Ile Cys His Arg Asp Gly Lys Pro Arg Tyr Leu Gly Asp  
 290 295 300

Val Pro Arg Phe Phe Arg Tyr Leu Glu Thr Ala Val Ala Arg Arg Pro  
 305 310 315 320

Glu Leu Ala Glu Leu Gly Glu Leu Leu Ala Ser Leu Pro Gln Gly Ala  
 325 330 335

Glu Ala

<210> 25  
 <211> 3270  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 25  
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 aacgatcggc gtgcacgact ggcattgaac gtcgagcgac aggacggcgg taccctgcag 120  
 attccggtgg ccagcgatat gctcggccat gaggagcacg agcgtatcca gcagaacacc 180  
 ttcttggttg tgatgccgct ggtccgcctg ccaacgctgg gcaaggccgg ttatggcgac 240  
 cagctgcccc cggcgcgct accgcgggcg ggacggatct acctgttcca ggacggcaag 300  
 ttgtggcgcg aactggaatg tgatggcaag ggcaacctgt tcgaagtcga tctcctgcag 360  
 gggcgcgacc agcgtgcgga caagcgctcg gccttaggca agacacaagc gctgatcctg 420  
 gtgccggtgc tggtaagggt gcagttcgtg atcccacgct acaccatggc ctatagcgaa 480  
 actccctggc cttggctgta catcgactgg ctggaggagg acccgcgagc ggtcaaccgg 540  
 cgctgccagc agatggcgct cgcttggaac gcctcggtgg ccaaccagca ctggaaagcc 600  
 tccatccatc aaccgcgct ggtcattgat catcacgccc agggtttgcg acctcgcgac 660  
 ttcaacgtcg agagcgcgct ggaagacctg gcggaattca cacctgagtt cgccgccttt 720  
 cgcaagagat cgctgggtgtg ccagttgcag cgacgccagc aggaattggc gccctgctg 780  
 aagcaggctc cgccctctgc gctacctact ctggaagccg gagaggacgt actggaaacc 840  
 ctcaagctgc gtggccatcc caacctcatc gggctgatgc tcgacgactc gctgttcgcc 900  
 ttgcgccacg ctgcggcgca ggcgcgccac tgcgccgctt acttgcgcag cctcaatgca 960

## 09743PC.ST25.txt

ctgctgccgc accgtcccaa cggacgctat gcacaggtgc tgagcaacat gctcgacggc 1020  
ccgctcgcca agctcagggg cgaggtcgat caggccgaac tggacgaggg gatcttcgcc 1080  
gaggagcgac agtcttgccg aatccacctg acgcagcagg tcgagcatct ggttgccctg 1140  
ctggaaggcc ccttgacccc ggtgttgag gactggaccc accagtgcga cgaagccctg 1200  
ctggagccct acagcctgat gagcgaggca ctggctgcgc tgaaccagct tcccgaaccg 1260  
tgcgacgcac tgtacagcgg taccgcctac cgggcgctgg cggcacatgt cgagcgggtg 1320  
gtcagcacgg ttctgcaggc aagccaccgg cttggcgcca tgctcctggc caaggacgaa 1380  
ggacaacttc ccgagccggt tcggcgctg caggcgctgc gcgatagccc gcggacgccc 1440  
gaccccgatg caatgggcct cagcacgctg atgctgggag ccagtctgct gggcgaggtc 1500  
gaccagccca gcgccggcaa gagcctcgcc tacttccicg gcgacctgct ggacgtgttc 1560  
ggcgccagcg tagtcgagca actcggccgg ctgtcccagg gcgccacca gatccagctc 1620  
gaccgcttgt tcgcaccgac cttcaatact ctgagcgccc tctcggtgaa gatgaaaggt 1680  
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cggcgcgcca tcgttcagga cggtgccggc aatcccctgg ccggcaccag tcccgcgac 1860  
accggcatga gtcgcgccaa cctgcgcaac gtcattggtg tggcggtacc caaggatcac 1920  
ccggacctgc ttgcctacac gaaattccgt acgcagttag gcacgttgac ccaggtgatg 1980  
gagaacactc gcatcgctgc gacgatgatg ctggggtttg cgatttataa cttgaatgtg 2040  
caggtgcagg catacagtg cttttagtag agtgagagaa agcacagagg gacgatcggg 2100  
gctgtcggtg cagtaatcga ttaacagcc gctggaggaa gccatgcaa gctgcttttc 2160  
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cgatgggcca ggaatctaga agttcaaaca ggcagcccta agttaggggt gctacgtggg 2280  
cttgggtggcg cagccacact attcgggtgca ggcacagtg tatgggatgg ctaccgagct 2340  
ttgaggcagg gagatagcga tcgggctgcg gcctacggtg tggccgcagt ggggtggggg 2400  
ctttggggtg cctacgtcct aggatggata gtaaaccctt atgctttgct ggctgggtgcg 2460  
gttttggcga tcggaggcac tgtggtcgct aatctactga ctgacagcga tcgggaaacc 2520  
atcgtaaaga aaggcccctt cggccggcaa ttcgccgagg ctggcctgct cgattcgctg 2580  
atgggcccagg accagcgctt cggccatctg aaagaccgc aaacggccta tcgccaattg 2640  
ctgggagtcc tcggccatcc gcgggtcttt gtccatcgcc tggaagactg gcgcaaattg 2700  
gcgccggcgg cgcacgacg tgtcttgag gaagcggaac ggggtcgcca agcggtcagc 2760  
cgactgcgc tctctgcat cgaccccaag ttgcaggcgc tggaggcaaa cgattggggc 2820  
gtggtgctga gttccccgct cctggccatg ttcgagaatg gccagaaggc gttccgcctg 2880

09743PC.ST25.txt

```

gtggcccagg agtttctcag cagcttgccg atcgatccgg gcaccctggt cggcgtcaag 2940
cgctaccatc ggggtccccgc gggccccgcc aagctcgaag ccttgccggt ggatgctgcc 3000
agcgtgctct atgtgctgcc ggccagcctg ccgattccgc agttgtctcc tcgggccccgc 3060
tatagcatgc gcatgaccca gggtttgaag atcagcgcac agttcgaact caatgccgac 3120
cagcctgagc agcggcttgt cctgcctcaa cccagcccga agagttggag tgcattcaca 3180
tccgccaatc ggtaccttcc cccggacgac ttggggcccc atgctgcgcc accttattgg 3240
ttgatagaga acagtgagtt caacgtatga 3270

```

```

<210> 26
<211> 1089
<212> PRT
<213> Pseudomonas aeruginosa

```

```

<400> 26

```

```

Met Ser Gly Phe Gln Asp Gln Ser Ile Asp Glu Gly Val Arg Lys Arg
1           5           10           15

```

```

Thr Ala Tyr Gln Asn Asp Arg Arg Ala Arg Leu Ala Leu Asn Val Glu
20           25           30

```

```

Arg Gln Asp Gly Gly Ile Leu Gln Ile Pro Val Ala Ser Asp Met Leu
35           40           45

```

```

Gly His Glu Glu His Glu Arg Ile Gln Gln Asn Thr Phe Leu Ala Val
50           55           60

```

```

Met Pro Leu Val Arg Leu Pro Thr Leu Gly Lys Ala Gly Tyr Gly Asp
65           70           75           80

```

```

Gln Leu Pro Ala Gly Ala Leu Pro Arg Ala Gly Arg Ile Tyr Leu Phe
85           90           95

```

```

Gln Asp Gly Lys Leu Trp Arg Glu Leu Glu Cys Asp Gly Lys Gly Asn
100          105          110

```

```

Leu Phe Glu Val Asp Leu Leu Gln Gly Arg Ser Gln Arg Ala Asp Lys
115          120          125

```

```

Arg Pro Ala Leu Gly Lys Thr Gln Ala Leu Ile Leu Val Pro Val Leu
130          135          140

```

```

Val Lys Gly Gln Phe Val Ile Pro Arg Tyr Thr Met Ala Tyr Ser Glu
145          150          155          160

```

```

Thr Pro Trp Pro Trp Ser Tyr Ile Asp Trp Leu Glu Glu Asp Pro Gln

```

09743PC.ST25.txt

165

170

175

Arg Val Asn Arg Arg Cys Gln Gln Met Ala Ser Ala Trp Asn Ala Ser  
 180 185 190

Val Ala Asn Gln His Trp Lys Ala Ser Ile His Gln Pro Ala Leu Val  
 195 200 205

Ile Asp His His Ala Gln Gly Leu Arg Pro Arg Asp Phe Asn Val Glu  
 210 215 220

Ser Ala Leu Glu Asp Pro Ala Glu Phe Thr Pro Glu Phe Ala Ala Phe  
 225 230 235 240

Arg Glu Glu Ser Leu Val Cys Gln Leu Gln Arg Arg Gln Gln Glu Leu  
 245 250 255

Ala Pro Leu Leu Lys Gln Ala Pro Pro Ser Ala Leu Pro Thr Leu Glu  
 260 265 270

Ala Gly Glu Asp Val Leu Glu Thr Leu Lys Leu Arg Gly His Pro Asn  
 275 280 285

Leu Ile Gly Leu Met Leu Asp Asp Ser Leu Phe Ala Leu Arg His Ala  
 290 295 300

Ala Ala Gln Ala Arg His Cys Ala Ala Tyr Leu Arg Ser Leu Asn Ala  
 305 310 315 320

Leu Leu Pro His Arg Pro Asn Gly Arg Tyr Ala Gln Val Leu Ser Asn  
 325 330 335

Met Leu Asp Gly Pro Leu Ala Lys Leu Arg Gly Glu Val Asp Gln Ala  
 340 345 350

Glu Leu Asp Glu Ala Ile Phe Ala Glu Glu Arg Gln Ser Cys Arg Ile  
 355 360 365

His Leu Thr Gln Gln Val Glu His Leu Val Ala Leu Leu Glu Gly Pro  
 370 375 380

Leu His Pro Val Leu Gln Asp Trp Thr His Gln Cys Asp Glu Ala Leu  
 385 390 395 400

Leu Glu Pro Tyr Ser Leu Met Ser Glu Ala Leu Ala Ala Leu Asn Gln  
 405 410 415

Leu Pro Asp Arg Cys Asp Ala Leu Tyr Ser Gly Thr Ala Tyr Arg Ala

09743PC.ST25.txt

420

425

430

Leu Ala Ala His Val Glu Arg Val Val Ser Thr Val Leu Gln Ala Ser  
 435 440 445

His Pro Leu Gly Ala Met Leu Leu Ala Lys Asp Glu Gly Gln Leu Pro  
 450 455 460

Glu Pro Val Arg Arg Leu Gln Ala Leu Arg Asp Ser Pro Arg Thr Pro  
 465 470 475 480

Asp Pro Asp Ala Met Gly Leu Ser Thr Leu Met Leu Gly Ala Ser Leu  
 485 490 495

Leu Gly Glu Val Asp Gln Pro Ser Ala Gly Lys Ser Leu Ala Tyr Phe  
 500 505 510

Leu Gly Asp Leu Leu Asp Val Phe Gly Ala Ser Val Val Glu Gln Leu  
 515 520 525

Gly Arg Leu Ser Gln Gly Ala Thr Gln Ile Gln Leu Asp Arg Leu Phe  
 530 535 540

Ala Pro Thr Phe Asn Thr Leu Ser Ala Leu Ser Val Lys Met Lys Gly  
 545 550 555 560

Ile Arg Leu Leu Pro Asp Ser Gln Val Pro Leu Asp Met Val Val Val  
 565 570 575

Gly Val Arg Gly Ala Gly Leu Arg Asn Gly Leu Thr Glu Val Glu Arg  
 580 585 590

Gln Glu Leu Arg Arg Lys Ser Tyr Arg Arg Ala Ile Val Gln Asp Gly  
 595 600 605

Ala Gly Asn Pro Leu Ala Gly Thr Ser Pro Arg Asp Thr Gly Met Ser  
 610 615 620

Arg Ala Asn Leu Arg Asn Val Met Val Val Ala Val Pro Lys Asp His  
 625 630 635 640

Pro Asp Leu Leu Ala Tyr Thr Lys Phe Arg Thr Gln Leu Gly Thr Leu  
 645 650 655

Thr Gln Val Met Glu Asn Thr Arg Ile Val Pro Thr Met Met Leu Gly  
 660 665 670

Phe Ala Ile Tyr Asn Leu Asn Val Gln Val Gln Ala Tyr Ser Gly Phe

09743PC.ST25.txt

675

680

685

Val Asp Ser Gly Glu Lys His Arg Gly Thr Ile Gly Ala Val Gly Ala  
 690 695 700

Val Ile Asp Leu Thr Ala Ala Gly Gly Ser His Ala Lys Leu Leu Phe  
 705 710 715 720

Gly Pro Ser Thr Ala Lys Tyr Leu Glu Thr Pro Arg Ile Ser Val Ala  
 725 730 735

Gln Ile Ser Pro Arg Trp Ala Arg Asn Leu Glu Val Gln Thr Gly Ser  
 740 745 750

Pro-Lys Leu Gly Leu Leu Arg Gly Leu Gly Gly Ala Ala Thr Leu Phe  
 755 760 765

Gly Ala Gly Ile Ser Val Trp Asp Gly Tyr Arg Ala Leu Arg Gln Gly  
 770 775 780

Asp Ser Asp Ala Ala Ala Tyr Gly Val Ala Ala Val Gly Gly Gly  
 785 790 795 800

Leu Trp Gly Ala Tyr Val Leu Gly Trp Ile Val Asn Pro Tyr Ala Leu  
 805 810 815

Leu Ala Gly Ala Val Leu Ala Ile Gly Gly Thr Val Val Ala Asn Leu  
 820 825 830

Leu Thr Asp Ser Asp Ala Glu Thr Ile Val Lys Lys Gly Pro Phe Gly  
 835 840 845

Arg-Gln Phe Ala Glu Ala Gly Leu Leu Asp Ser Leu Met Gly Gln Asp  
 850 855 860

Gln Arg Phe Ala His Leu Lys Asp Pro Gln Thr Ala Tyr Arg Gln Leu  
 865 870 875 880

Leu Gly Val Leu Gly His Pro Arg Val Phe Val His Arg Leu Glu Asp  
 885 890 895

Trp Arg Lys Leu Ala Pro Ala Ala His Arg Ser Val Leu Gln Glu Ala  
 900 905 910

Glu Arg Gly Arg Gln Ala Val Ser Arg Thr Ala Leu Ser Cys Ile Asp  
 915 920 925

Pro Lys Leu Gln Ala Leu Glu Ala Asn Asp Trp Ala Val Val Leu Ser

09743PC.ST25.txt

930

935

940

Ser Pro Leu Leu Ala Met Phe Glu Asn Gly Gln Lys Ala Phe Arg Leu  
 945 950 955 960

Val Ala Gln Glu Phe Leu Ser Ser Leu Pro Ile Asp Pro Gly Thr Leu  
 965 970 975

Phe Gly Val Lys Arg Tyr His Arg Val Pro Ala Gly Pro Ala Lys Leu  
 980 985 990

Glu Ala Leu Pro Leu Asp Ala Ala Ser Val Leu Tyr Val Leu Pro Ala  
 995 1000 1005

Ser Leu Pro Ile Pro Gln Leu Ser Pro Arg Ala Arg Tyr Ser Met  
 1010 1015 1020

Arg Met Thr Gln Gly Leu Lys Ile Ser Ala Gln Phe Glu Leu Asn  
 1025 1030 1035

Ala Asp Gln Pro Glu Gln Arg Leu Val Leu Pro Gln Pro Ser Pro  
 1040 1045 1050

Lys Ser Trp Ser Ala Phe Thr Ser Ala Asn Arg Tyr Leu Pro Pro  
 1055 1060 1065

Asp Asp Leu Gly Pro His Ala Ala Pro Pro Tyr Trp Leu Ile Glu  
 1070 1075 1080

Asn Ser Glu Phe Asn Val  
 1085

&lt;210&gt; 27

&lt;211&gt; 756

&lt;212&gt; DNA

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 27

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 ccagacatcg acctgcttgc cctgcagtac ccgggtcgcg aggaccgctt caacgaggcg 180  
 ccggccaccc gcctggagga cctcgccgac ggcgccgcc tcgccctgcg cgatttcgcc 240  
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 ctgcgcctgg aaagcgccgg cgcgccgctg cgccacctgt tcgtctccgc ccatccggca 360  
 ccgcaccggc aacgcggcgg cgcgttgac cgcggcgacg aggcggcgct gctggaggac 420  
 gtccgccgcc aggggtggcg cagcgagcta ctcgaggacg ccgacctgcg cgcgctgttc 480



## 09743PC.ST25.txt

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gaggcgcagg cctggagcga cgccagccgg actcccgcca ggctgcggcg ctttcctggc 660
ggccacttct acctgagcga ggggcgcgac gcggtgatcg agcacctgct gcgccgcctc 720
gcacatcccg acgccctttc ccgagaggtt gcatga 756

```

```

<210> 28
<211> 251
<212> PRT
<213> Pseudomonas aeruginosa

```

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<400> 28

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Met Ser Ala Ala Trp Val Arg Pro Phe Arg Leu Thr Pro Met Pro Arg
1           5           10           15

```

```

Leu Arg Leu Ala Cys Phe Pro His Ala Gly Gly Ser Ala Ser Phe Phe
           20           25           30

```

```

Arg Ser Trp Ser Glu Arg Leu Pro Pro Asp Ile Asp Leu Leu Ala Leu
           35           40           45

```

```

Gln Tyr Pro Gly Arg Glu Asp Arg Phe Asn Glu Ala Pro Ala Thr Arg
50           55           60

```

```

Leu Glu Asp Leu Ala Asp Gly Ala Ala Leu Ala Leu Arg Asp Phe Ala
65           70           75           80

```

```

Asp Ala Pro Leu Ala Leu Phe Gly His Ser Leu Gly Ala Ala Leu Ala
           85           90           95

```

```

Tyr Glu Thr Ala Leu Arg Leu Glu Ser Ala Gly Ala Pro Leu Arg His
100           105           110

```

```

Leu Phe Val Ser Ala His Pro Ala Pro His Arg Gln Arg Gly Gly Ala
115           120           125

```

```

Leu His Arg Gly Asp Glu Ala Ala Leu Leu Glu Asp Val Arg Arg Gln
130           135           140

```

```

Gly Gly Ala Ser Glu Leu Leu Glu Asp Ala Asp Leu Arg Ala Leu Phe
145           150           155           160

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```

Leu Pro Ile Leu Arg Ala Asp Tyr Gln Ala Ile Glu Thr Tyr Arg Arg
165           170           175

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```

Ala Gln Pro Ile Ala Leu Ala Cys Ala Leu Asp Val Leu Leu Gly Glu

```

09743PC.ST25.txt

180

185

190

His Asp Glu Glu Val Ser Ala Ala Glu Ala Gln Ala Trp Ser Asp Ala  
 195 200 205

Ser Arg Thr Pro Ala Arg Leu Arg Arg Phe Pro Gly Gly His Phe Tyr  
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Leu Ser Glu Gly Arg Asp Ala Val Ile Glu His Leu Leu Arg Arg Leu  
 225 230 235 240

Ala His Pro Asp Ala Leu Ser Arg Glu Val Ala  
 245 250

<210> 29  
 <211> 4317  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 29  
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 ggcgtgacct tgtccagcgt gttcggctgc gccttcgcgc tggtcctggc gcgctggagc 1080  
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## 09743PC.ST25.txt

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## 09743PC.ST25.txt

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&lt;210&gt; 30

&lt;211&gt; 1438

&lt;212&gt; PRT

<213> *Pseudomonas aeruginosa*

&lt;400&gt; 30

```

Met Asp Leu Pro Pro Asp Ser Arg Thr Ala Leu Arg Asp Trp Leu Thr
1           5           10           15

```

```

Glu Gln Leu Ala Asp Leu Leu Gly Glu Pro Leu Ala Asp Val Arg Ala
20           25           30

```

```

Leu Ala Asp Asp Asp Asp Leu Leu Gly Cys Gly Leu Asp Ser Ile Arg
35           40           45

```

```

Leu Met Tyr Leu Gln Glu Arg Leu Arg Ala Arg Gly Ser Thr Leu Asp
50           55           60

```

09743PC.ST25.txt

Phe Ala Gln Leu Ala Gln Arg Pro Cys Leu Gly Ala Trp Leu Asp Leu  
 65 70 75 80

Leu Ala Cys Ala Asp Arg Leu Ser Ala Pro Ala Thr Val Ala Leu Pro  
 85 90 95

Thr Ala Gln Asp Arg Asp Gln Pro Phe Glu Leu Ser Ser Val Gln Gln  
 100 105 110

Ala Tyr Trp Leu Gly Arg Gly Ala Gly Glu Val Leu Gly Asn Val Ser  
 115 120 125

Cys His Ala Phe Leu Glu Phe Arg Thr Arg Asp Val Asp Pro Gln Arg  
 130 135 140

Leu Ala Ala Ala Ala Glu Cys Val Arg Gln Arg His Pro Met Leu Arg  
 145 150 155 160

Ala Arg Phe Leu Asp Gly Arg Gln Gln Ile Leu Pro Thr Pro Pro Leu  
 165 170 175

Ser Cys Phe Asp Leu Gln Asp Trp Arg Thr Leu Gln Val Asp Glu Ala  
 180 185 190

Glu Arg Asp Trp Gln Ala Leu Arg Asp Trp Arg Ala His Glu Cys Leu  
 195 200 205

Ala Val Glu Arg Gly Gln Val Phe Leu Leu Gly Leu Val Arg Met Pro  
 210 215 220

Gly Gly Glu Asp Arg Leu Trp Leu Ser Leu Asp Leu Leu Ala Ala Asp  
 225 230 235 240

Val Glu Ser Leu Arg Leu Leu Leu Ala Glu Leu Gly Val Ala Tyr Leu  
 245 250 255

Ala Pro Glu Arg Leu Ala Glu Pro Pro Ala Leu His Phe Ala Asp Tyr  
 260 265 270

Leu Ala His Arg Ala Ala Gln Arg Ala Glu Ala Ala Ala Arg Ala Arg  
 275 280 285

Asp Tyr Trp Leu Glu Arg Leu Pro Arg Leu Pro Asp Ala Pro Ala Leu  
 290 295 300

Pro Leu Ala Cys Ala Pro Glu Ser Ile Arg Gln Pro Arg Thr Arg Arg  
 305 310 315 320

09743PC.ST25.txt

Leu Ala Phe Gln Leu Ser Ala Gly Glu Ser Arg Arg Leu Glu Arg Leu  
 325 330 335

Ala Ala Gln His Gly Val Thr Leu Ser Ser Val Phe Gly Cys Ala Phe  
 340 345 350

Ala Leu Val Leu Ala Arg Trp Ser Glu Ser Ala Glu Phe Leu Leu Asn  
 355 360 365

Val Pro Leu Phe Asp Arg His Ala Asp Asp Pro Arg Ile Gly Glu Val  
 370 375 380

Ile Ala Asp Phe Thr Thr Leu Leu Leu Leu Glu Cys Arg Met Gln Ala  
 385 390 395 400

Gly Val Ser Phe Ala Glu Ala Val Lys Ser Phe Gln Arg Asn Leu His  
 405 410 415

Gly Ala Ile Asp His Ala Ala Phe Pro Ala Leu Glu Val Leu Arg Glu  
 420 425 430

Ala Arg Arg Gln Gly Gln Pro Arg Ser Ala Pro Val Val Phe Ala Ser  
 435 440 445

Asn Leu Gly Glu Glu Gly Phe Val Pro Ala Ala Phe Arg Asp Ala Phe  
 450 455 460

Gly Asp Leu His Asp Met Leu Ser Gln Thr Pro Gln Val Trp Leu Asp  
 465 470 475 480

His Gln Leu Tyr Arg Val Gly Asp Gly Ile Leu Leu Ala Trp Asp Ser  
 485 490 495

Val Val Gly Leu Phe Pro Glu Gly Leu Pro Glu Thr Met Phe Glu Ala  
 500 505 510

Tyr Val Gly Leu Leu Gln Arg Leu Cys Asp Ser Ala Trp Gly Gln Pro  
 515 520 525

Ala Asp Leu Pro Leu Pro Trp Ala Gln Gln Ala Arg Arg Ala Leu Leu  
 530 535 540

Asn Gly Gln Pro Ala Cys Ala Thr Ala Arg Thr Leu His Arg Asp Phe  
 545 550 555 560

Phe Leu Arg Ala Ala Glu Ala Pro Asp Ala Asp Ala Leu Leu Tyr Arg  
 565 570 575

09743PC.ST25.txt

Asp Gln Arg Val Thr Arg Gly Glu Leu Ala Glu Arg Ala Leu Arg Ile  
 580 585 590

Ala Gly Gly Leu Arg Glu Ala Gly Val Arg Pro Gly Asp Ala Val Glu  
 595 600 605

Val Ser Leu Pro Arg Gly Pro Gln Gln Val Ala Ala Val Phe Gly Val  
 610 615 620

Leu Ala Ala Gly Ala Cys Tyr Val Pro Leu Asp Ile Asp Gln Pro Pro  
 625 630 635 640

Ala Arg Arg Arg Leu Ile Glu Glu Ala Ala Gly Val Cys Leu Ala Ile  
 645 650 655

Thr Glu Glu Asp Asp Pro Gln Ala Leu Pro Pro Arg Leu Asp Val Gln  
 660 665 670

Arg Leu Leu Arg Gly Pro Ala Leu Ala Ala Pro Val Pro Leu Ala Pro  
 675 680 685

Gln Ala Ser Ala Tyr Val Ile Tyr Thr Ser Gly Ser Thr Gly Val Pro  
 690 695 700

Lys Gly Val Glu Val Ser His Ala Ala Ala Ile Asn Thr Ile Asp Ala  
 705 710 715 720

Leu Leu Asp Leu Leu Arg Val Asn Ala Ser Asp Arg Leu Leu Ala Val  
 725 730 735

Ser Ala Leu Asp Phe Asp Leu Ser Val Phe Asp Leu Phe Gly Gly Leu  
 740 745 750

Gly Ala Gly Ala Ser Leu Val Leu Pro Ala Gln Glu Gln Ala Arg Asp  
 755 760 765

Ala Ala Ala Trp Ala Glu Ala Ile Gln Arg His Ala Val Ser Leu Trp  
 770 775 780

Asn Ser Ala Pro Ala Leu Leu Glu Met Ala Leu Ser Leu Pro Ala Ser  
 785 790 795 800

Gln Ala Asp Tyr Arg Ser Leu Arg Ala Val Leu Leu Ser Gly Asp Trp  
 805 810 815

Val Ala Leu Asp Leu Pro Gly Arg Leu Arg Pro Arg Cys Ala Glu Gly  
 820 825 830

09743PC.ST25.txt

Cys Arg Leu His Val Leu Gly Gly Ala Thr Glu Ala Gly Ile Trp Ser  
 835 840 845

Asn Leu Gln Ser Val Asp Thr Val Pro Pro His Trp Arg Ser Ile Pro  
 850 855 860

Tyr Gly Arg Pro Leu Pro Gly Gln Ala Tyr Arg Val Val Asp Thr His  
 865 870 875 880

Gly Arg Asp Val Pro Asp Leu Val Val Gly Glu Leu Trp Ile Gly Gly  
 885 890 895

Ala Ser Leu Ala Arg Gly Tyr Arg Asn Asp Pro Glu Leu Ser Ala Arg  
 900 905 910

Arg Phe Val His Asp Ala Gln Gly Arg Trp Tyr Arg Thr Gly Asp Arg  
 915 920 925

Gly Arg Tyr Trp Gly Asp Gly Thr Leu Glu Phe Leu Gly Arg Val Asp  
 930 935 940

Gln Gln Val Lys Val Arg Gly Gln Arg Ile Glu Leu Gly Glu Val Glu  
 945 950 955 960

Ala Ala Leu Cys Ala Gln Ala Gly Val Glu Ser Ala Cys Ala Ala Val  
 965 970 975

Leu Gly Gly Gly Val Ala Ser Leu Gly Ala Val Leu Val Pro Arg Leu  
 980 985 990

Ala Pro Arg Ala Glu Gly Ser Met Asp Leu Pro Ala Ala Gln Pro Phe  
 995 1000 1005

Ala Gly Leu Ala Glu Ala Glu Ala Val Leu Thr Arg Glu Ile Leu  
 1010 1015 1020

Gly Ala Leu Leu Glu Ala Pro Leu Glu Leu Asp Asp Gly Leu Arg  
 1025 1030 1035

Arg Arg Trp Leu Asp Trp Leu Ala Asp Ser Ala Ala Ser Ala Leu  
 1040 1045 1050

Pro Ser Leu Asp Glu Ala Leu Arg Arg Leu Gly Trp Gln Ala Ala  
 1055 1060 1065

Gly Leu Thr Ala Met Gly Asn Ala Leu Arg Gly Leu Leu Ala Gly  
 1070 1075 1080



09743PC.ST25.txt

Glu Gln Ala Pro Ala Ala Leu Leu Leu Asp Pro Trp Leu Ala Pro  
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 Gln Ala Val Ala Ala Arg Leu Pro Asp Gly Arg Glu Ala Leu Ala  
 1100 1105 1110  
 Arg Leu Leu Glu Ala Leu Pro Thr Pro Ala Ala Gly Glu Arg Leu  
 1115 1120 1125  
 Arg Val Ala Val Leu Asp Thr Arg Ala Gly Leu Trp Leu Asp Gln  
 1130 1135 1140  
 Gly Met Ala Ser Leu Leu Arg Pro Gly Leu Glu Leu Thr Leu Phe  
 1145 1150 1155  
 Glu Arg Ser Arg Val Leu Leu Asp Ala Ala Ala Thr Arg Leu Pro  
 1160 1165 1170  
 Glu Arg Ile Val Val Gln Ala Leu Asp Asp Gly Leu Leu Pro Ala  
 1175 1180 1185  
 Glu His Leu Gly Arg Tyr Asp Arg Val Ile Ser Phe Ala Ala Leu  
 1190 1195 1200  
 His Ala Tyr Glu Ala Ser Arg Glu Gly Leu Ala Leu Ala Ala Ala  
 1205 1210 1215  
 Leu Leu Arg Pro Gln Gly Arg Leu Leu Leu Val Asp Leu Leu Cys  
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 Glu Ser Pro Leu Ala Leu Leu Gly Ala Ala Leu Leu Asp Asp Arg  
 1235 1240 1245  
 Pro Leu Arg Leu Ala Glu Leu Pro Ser Leu Leu Ala Asp Leu Ala  
 1250 1255 1260  
 Ala Ala Gly Leu Ala Pro Arg Cys Leu Trp Arg Ser Glu Arg Ile  
 1265 1270 1275  
 Ala Leu Val Glu Ala Leu Ala Pro Gly Leu Gly Leu Asp Ala Ala  
 1280 1285 1290  
 Ala Leu Gln Ala Gly Leu Glu Gln Arg Leu Pro Gln Ala Met Arg  
 1295 1300 1305  
 Pro Glu Arg Leu Trp Cys Leu Pro Ser Leu Pro Leu Asn Gly Asn  
 1310 1315 1320

09743PC.ST25.txt

Gly Lys Val Asp Arg Arg Arg Leu Ala Glu Ser Met Thr Arg Ala  
 1325 1330 1335

Leu Gly Glu Cys Arg His Glu Pro Ser Ala Glu Glu Pro Leu Glu  
 1340 1345 1350

Ala His Glu Gln Ala Leu Ala Glu Cys Trp Glu Ala Val Leu Lys  
 1355 1360 1365

Arg Pro Val Arg Arg Arg Glu Ala Ser Phe Phe Ser Leu Gly Gly  
 1370 1375 1380

Asp Ser Leu Leu Ala Thr Arg Leu Leu Ala Gly Ile Arg Glu Arg  
 1385 1390 1395

Phe Gly Val Arg Leu Gly Met Ala Asp Phe Tyr Arg Gln Pro Thr  
 1400 1405 1410

Leu Ala Gly Leu Ala Arg His Leu Gln Val Gln Thr Val Glu Ile  
 1415 1420 1425

Glu Glu Thr Gln Leu Glu Glu Gly Val Leu  
 1430 1435

&lt;210&gt; 31

&lt;211&gt; 5430

&lt;212&gt; DNA

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 31

```

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ctgggggccc agcgcgaggc cctgctggaa cacctggaag gcggccctgg ctggcgcgcc      180
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## 09743PC.ST25.txt

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## 09743PC.ST25.txt

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## 09743PC.ST25.txt

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&lt;211&gt; 1809

&lt;212&gt; PRT

&lt;213&gt; Pseudomonas aeruginosa

&lt;400&gt; 32

```

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```

```

Leu Trp Ser Glu Ala Gly Arg Leu Arg Tyr Arg Ala Pro Gln Gly Ala
          20           25           30

```

```

Leu Asp Ala Gly Leu Ala Glu Arg Leu Arg Ala Glu Arg Glu Ala Leu
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```

```

Leu Glu His Leu Glu Gly Gly Pro Gly Trp Arg Ala Glu Pro Asp Met
          50           55           60

```

```

Ala His Gln Arg Phe Pro Leu Thr Pro Val Gln Ala Ala Tyr Val Leu
65           70           75           80

```

```

Gly Arg Gln Ala Ala Phe Asp Tyr Gly Gly Asn Ala Cys Gln Leu Tyr
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```

```

Ala Glu Tyr Asp Trp Pro Ala Asp Thr Asp Pro Ala Arg Leu Glu Ala
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```

09743PC.ST25.txt

Ala Trp Asn Ala Met Val Glu Arg His Pro Met Leu Arg Ala Val Ile  
 115 120 125

Glu Asp Asn Ala Trp Gln Arg Val Leu Pro Glu Val Pro Trp Gln Arg  
 130 135 140

Leu Thr Val His Ala Cys Ala Gly Leu Asp Glu Ala Ala Phe Gln Ala  
 145 150 155 160

His Leu Glu Arg Val Arg Glu Arg Leu Asp His Ala Cys Ala Ala Leu  
 165 170 175

Asp Gln Trp Pro Val Leu Arg Pro Glu Leu Ser Ile Gly Arg Asp Ala  
 180 185 190

Cys Val Leu His Cys Ser Val Asp Phe Thr Leu Val Asp Tyr Ala Ser  
 195 200 205

Leu Gln Leu Leu Leu Gly Glu Trp Arg Arg Arg Tyr Leu Asp Pro Gln  
 210 215 220

Trp Thr Ala Glu Pro Leu Glu Ala Thr Phe Arg Asp Tyr Val Gly Val  
 225 230 235 240

Glu Gln Arg Arg Arg Gln Ser Pro Ala Trp Gln Arg Asp Arg Asp Trp  
 245 250 255

Trp Leu Ala Arg Leu Asp Ala Leu Pro Gly Arg Pro Asp Leu Pro Leu  
 260 265 270

Arg Val Gln Pro Asp Thr Arg Ser Thr Arg Phe Arg His Phe His Ala  
 275 280 285

Arg Leu Asp Glu Ala Ala Trp Gln Ala Leu Gly Ala Arg Ala Gly Glu  
 290 295 300

His Gly Leu Ser Ala Ala Gly Val Ala Leu Ala Ala Phe Ala Glu Thr  
 305 310 315 320

Ile Gly Arg Trp Ser Gln Ala Pro Ala Phe Cys Leu Asn Leu Thr Val  
 325 330 335

Leu Asn Arg Pro Pro Leu His Pro Gln Leu Ala Gln Val Leu Gly Asp  
 340 345 350

Phe Thr Ala Leu Ser Leu Leu Ala Val Asp Ser Arg His Gly Asp Ser  
 355 360 365

09743PC.ST25.txt

Phe Val Glu Arg Ala Arg Arg Ile Gly Glu Gln Met Phe Asp Asp Leu  
 370 375 380

Asp His Pro Thr Phe Ser Gly Val Asp Leu Leu Arg Glu Leu Ala Arg  
 385 390 395 400

Arg Arg Gly Arg Gly Ala Asp Leu Met Pro Val Val Phe Thr Ser Gly  
 405 410 415

Ile Gly Ser Val Gln Arg Leu Leu Gly Asp Gly Glu Ala Pro Arg Ala  
 420 425 430

Pro Arg Tyr Met Ile Ser Gln Thr Pro Gln Val Trp Leu Asp Cys Gln  
 435 440 445

Val Thr Asp Gln Phe Gly Gly Leu Glu Ile Gly Trp Asp Val Arg Leu  
 450 455 460

Gly Leu Phe Pro Glu Gly Gln Ala Glu Ala Met Phe Asp Asp Phe Val  
 465 470 475 480

Gly Leu Leu Arg Arg Leu Ala Gln Ser Pro Arg Ala Trp Thr Asp Gly  
 485 490 495

Asp Ala Thr Glu Pro Val Glu Ala Pro Pro Gln Ala Leu Pro Gly Ser  
 500 505 510

Ala Arg Ser Ile Ala Ala Gly Phe Ala Glu Arg Ala Leu Leu Thr Pro  
 515 520 525

Asp Ala Thr Ala Ile His Asp Ala Ala Gly Ser Tyr Ser Tyr Arg Gln  
 530 535 540

Val Ala Gln His Ala Ser Ala Leu Arg Arg Val Leu Glu Ala His Gly  
 545 550 555 560

Ala Gly Arg Gly Arg Arg Val Ala Val Met Leu Pro Lys Ser Ala Ala  
 565 570 575

Gln Leu Val Ala Val Ile Gly Ile Leu Gln Ala Gly Ala Ala Tyr Val  
 580 585 590

Pro Val Asp Ile Arg Gln Pro Pro Leu Arg Arg Gln Ala Ile Leu Ala  
 595 600 605

Ser Ala Glu Val Val Ala Leu Val Cys Leu Glu Ser Asp Val Pro Asp  
 610 615 620

09743PC.ST25.txt

Val Gly Cys Ala Cys Val Ala Ile\* Asp Arg Leu Ala Ala Asp Ser Ala  
 625 630 635 640

Trp Pro Pro Pro Pro Ala Ala Glu Val Ala Ala Asp Asp Leu Ala Tyr  
 645 650 655

Val Ile Tyr Thr Ser Gly Ser Thr Gly Thr Pro Lys Gly Val Met Leu  
 660 665 670

Ser His Ala Ala Val Ser Asn Thr Leu Leu Asp Ile Asn Gln Arg Tyr  
 675 680 685

Gly Val Asp Ala Asn Asp Arg Val Leu Gly Leu Ala Glu Leu Ser Phe  
 690 695 700

Asp Leu Ser Val Tyr Asp Phe Phe Gly Ala Thr Ala Ala Gly Ala Gln  
 705 710 715 720

Val Val Leu Pro Asp Pro Ala Arg Gly Ser Asp Pro Ser His Trp Ala  
 725 730 735

Glu Leu Leu Glu Arg His Ala Ile Thr Leu Trp Asn Ser Val Pro Ala  
 740 745 750

Gln Gly Gln Met Leu Ile Asp Tyr Leu Glu Ser Glu Pro Gln Arg His  
 755 760 765

Leu Pro Gly Pro Arg Cys Val Leu Trp Ser Gly Asp Trp Ile Pro Val  
 770 775 780

Ser Leu Pro Thr Arg Trp Trp Arg Arg Trp Pro Asp Ser Ala Leu Phe  
 785 790 795 800

Ser Leu Gly Gly Ala Thr Glu Ala Ala Ile Trp Ser Ile Glu Gln Pro  
 805 810 815

Ile Arg Pro Gln His Thr Glu Leu Ala Ser Ile Pro Tyr Gly Arg Ala  
 820 825 830

Leu Arg Gly Gln Ser Val Glu Val Leu Asp Ala Arg Gly Arg Arg Cys  
 835 840 845

Pro Pro Gly Val Arg Gly Glu Ile His Ile Gly Gly Val Gly Leu Ala  
 850 855 860

Leu Gly Tyr Ala Gly Asp Pro Gln Arg Thr Ala Glu Arg Phe Val Arg  
 865 870 875 880



## 09743PC.ST25.txt

His Pro Asp Gly Arg Arg Leu Tyr Arg Thr Gly Asp Leu Gly Arg Tyr  
                   885                                  890                                  895

Leu Ala Asp Gly Ser Ile Glu Phe Leu Gly Arg Glu Asp Asp Gln Val  
                   900                                  905                                  910

Lys Ile Arg Gly His Arg Ile Glu Leu Ala Glu Leu Asp Ala Ala Leu  
                   915                                  920                                  925

Cys Ala His Pro Gln Val Asn Leu Ala Ala Thr Val Val Leu Gly Glu  
                   930                                  935                                  940

Thr His Glu Arg Ser Leu Ala Ser Phe Val Thr Leu His Ala Pro Val  
                   945                                  950                                  955                                  960

Glu Ala Gly Glu Asp Pro Arg Thr Ala Leu Asp Ala Val Arg Gln Arg  
                                   965                                  970                                  975

Ala Ala Gln Ala Leu Arg Arg Asp Trp Gly Ser Glu Glu Gly Ile Ala  
                   980                                  985                                  990

Ala Ala Val Ala Ala Leu Asp Arg Ala Cys Leu Ala Ser Leu Ala Ala  
                   995                                  1000                                  1005

Trp Leu Ala Gly Ser Gly Leu Phe Ala Ser Ala Thr Pro Leu Asp  
                   1010                                  1015                                  1020

Leu Ala Thr Leu Cys Gln Arg Leu Gly Ile Ala Glu Ala Arg Gln  
                   1025                                  1030                                  1035

Arg Leu Leu Arg His Trp Leu Arg Gln Leu Glu Glu Gly Gly Tyr  
                   1040                                  1045                                  1050

Leu Arg Ala Glu Gly Glu Gly Trp Leu Gly Cys Ala Glu Arg Pro  
                   1055                                  1060                                  1065

Ala Gln Ser Pro Glu Asp Ala Trp Thr Ala Phe Ala Gly Cys Ala  
                   1070                                  1075                                  1080

Pro Ala Ala Leu Trp Pro Ala Glu Leu Val Ala Tyr Leu Arg Asp  
                   1085                                  1090                                  1095

Ser Ala Gln Ser Leu Gly Glu Gln Leu Ala Gly Arg Ile Ser Pro  
                   1100                                  1105                                  1110

Ala Ala Leu Met Phe Pro Gln Gly Ser Ala Arg Ile Ala Glu Ala  
                   1115                                  1120                                  1125

09743PC.ST25.txt

Met Tyr Ser Gln Gly Leu His Ala Gln Ala Leu His Glu Ala Met  
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Ala Glu Ala Ile Ala Ala Ile Val Glu Arg Gln Pro Gln Arg Arg  
1145 1150 1155

Trp Arg Leu Leu Glu Leu Gly Ala Gly Thr Ala Ala Ala Ser Arg  
1160 1165 1170

Thr Val Ile Ala Arg Leu Ala Pro Leu Val Gln Arg Gly Ala Glu  
1175 1180 1185

Val Asp Tyr Leu Phe Thr Asp Val Ser Ser Tyr Phe Leu Ala Ala  
1190 1195 1200

Ala Arg Glu Arg Phe Ala Asp Gln Pro Trp Val Arg Phe Gly Arg  
1205 1210 1215

Phe Asp Met Asn Gly Asp Leu Leu Asp Gln Gly Val Ala Pro His  
1220 1225 1230

Ser Val Asp Ile Leu Leu Ser Ser Gly Ala Leu Asn Asn Ala Leu  
1235 1240 1245

Asp Thr Pro Ala Leu Leu Ala Gly Leu Arg Glu Leu Leu Ser Ala  
1250 1255 1260

Asp Ala Trp Leu Val Ile Gln Glu Leu Thr Arg Glu His Asn Glu  
1265 1270 1275

Ile Ser Val Ser Gln Ser Leu Met Met Glu Asn Pro Arg Asp Leu  
1280 1285 1290

Arg Asp Glu Arg Arg Gln Leu Phe Val His Thr Gly Gln Trp Leu  
1295 1300 1305

Glu Trp Leu Ala Ala Gln Gly Gly Asp Leu Ala Cys Gly Val Val  
1310 1315 1320

Pro Pro Gly Ser Ala Leu Asp Leu Leu Gly Tyr Asp Val Leu Leu  
1325 1330 1335

Ala Arg Cys Lys Thr Asp Arg Ala Arg Leu Glu Pro Ala Glu Leu  
1340 1345 1350

Leu Ala Phe Val Glu Ala Arg Val Pro Arg Tyr Met Leu Pro Ala  
1355 1360 1365

09743PC.ST25.txt

Gln Leu Arg Val Leu Glu Arg Leu Pro Val Thr Gly Asn Gly Lys  
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Ile Asp Arg Lys Ala Leu Thr Gly Phe Ala Arg Gln Pro Gln Ala  
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Asp Leu Arg His Gly Val Ala Gln Ala Pro Ala Asp Glu Leu Glu  
 1400 1405 1410

Asn Ala Leu Leu Ala Leu Trp Arg Glu Val Leu Asp Asn Pro Ser  
 1415 1420 1425

Leu Gly Val Glu Gln Asp Phe Phe Gly Ala Gly Gly Asp Ser Leu  
 1430 1435 1440

Leu Ile Ala Gln Leu Ile Ala Arg Leu Arg Glu Arg Leu Glu Ser  
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Ala Arg Arg His Pro Phe Asp Arg Leu Leu Arg Trp Ala Leu Ser  
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Gln Pro Thr Pro Arg Gly Leu Ala Glu Arg Leu Arg Ser Ala Pro  
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Glu Glu Gly Arg Gly Pro Ala Leu Ala Ala Ala Arg Gly Val Ala  
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Pro Ala Pro Ala Gly Met Ser Arg Ala Pro Leu Ala Glu Gly Ala  
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Val Ala Leu Asp Pro Leu Val Arg Leu Val Pro Gly Glu Gly Val  
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Pro Arg Val Leu Val His Glu Gly Leu Gly Thr Leu Leu Pro Tyr  
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Arg Pro Leu Leu Arg Ala Leu Gly Glu Gly Arg Pro Leu Leu Gly  
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Leu Ala Val His Asp Ser Asp Ala Tyr Leu Ala Ile Pro Ala Glu  
 1565 1570 1575

His Leu Asn Ala Cys Leu Gly Arg Arg Tyr Ala Glu Ala Leu His  
 1580 1585 1590

Arg Ala Gly Leu Arg Glu Val Asp Leu Leu Gly Tyr Cys Ser Gly  
 1595 1600 1605

## 09743PC.ST25.txt

Gly Leu Val Ala Leu Glu Thr Ala Lys Ser Leu Val Gln Arg Gly  
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 Val Arg Val Arg Gln Leu Asp Ile Val Ser Ser Tyr Arg Ile Pro  
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 Thr Leu Gly Leu Asp Thr Ala Ala Leu Gly Phe Pro Ala Pro Glu  
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 Arg Leu Val Ala Glu Ala Leu Ala Gly Leu Pro Gly Leu Ala Asp  
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 Ala Asp Ala Val Ser Val Glu Arg Asp Thr Leu Tyr Arg Leu Phe  
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 Cys His Ser Val Arg Ala Ser Gln Ala Glu Ala Pro Glu Pro Tyr  
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## 09743PC.ST25.txt

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 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 34

09743PC.ST25.txt

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 Pro Trp Met Leu Leu Ala Trp Leu Ala Glu Pro Leu Ala Arg Gly Gln  
 35 40 45  
 Ala Gln Pro Ala Leu Leu Ala Leu Val Leu Leu Ala Val Leu Ala Trp  
 50 55 60  
 Leu Gly Cys Gln Ala Leu Ala Ala His Leu Ala His Arg Val Asp Ala  
 65 70 75 80  
 Asp Leu Cys Asn Asp Leu Arg Leu Arg Leu Leu Ala His Leu Gln Arg  
 85 90 95  
 Leu Pro Leu Asp Trp Phe Gly Arg Gln Gly Pro Asp Gly Val Ala Arg  
 100 105 110  
 Leu Val Glu Gln Asp Val Arg Ala Leu His Gln Leu Ile Ala His Ala  
 115 120 125  
 Pro Asn Asp Leu Ser Asn Leu Leu Val Val Pro Leu Val Ala Leu Leu  
 130 135 140  
 Trp Leu Ala Trp Leu His Pro Trp Leu Leu Leu Phe Cys Leu Leu Pro  
 145 150 155 160  
 Leu Val Leu Ala Ala Ala Gly Phe Leu Leu Leu Arg Ser Ala Arg Tyr  
 165 170 175  
 Arg Asp Leu Val Leu Arg Arg Asn Ala Ala Leu Glu Arg Leu Ser Ala  
 180 185 190  
 Asp Tyr Gly Glu Phe Ala His Asn Leu Leu Leu Ala Arg Gln Tyr Pro  
 195 200 205  
 Gly Ala Gly Ile Gln Gln Gly Ala Glu Ala Ser Ala Ala Ala Phe Gly  
 210 215 220  
 Glu Ala Phe Gly Ala Trp Val Lys Arg Val Gly His Leu Ala Ala Leu  
 225 230 235 240  
 Val Tyr Val Gln Leu Ser Thr Pro Trp Leu Leu Ala Trp Val Leu Leu  
 245 250 255

09743PC.ST25.txt

Gly Ala Leu Ala Leu Asp Ala Leu Gly Val Pro Leu Ala Leu Gly Gln  
 260 265 270

Ala Cys Ala Phe Leu Leu Leu Leu Arg Ala Leu Ala Ala Pro Val Gln  
 275 280 285

Ala Leu Gly His Gly Gly Asp Ala Leu Leu Gly Ala Arg Ala Ala Ala  
 290 295 300

Glu Arg Leu Gln Gln Val Phe Asp Gln Ala Pro Leu Ala Glu Gly Arg  
 305 310 315 320

Ser Thr Arg Glu Pro Val Asp Gly Ala Val Ala Leu His Gly Leu Gly  
 325 330 335

His Ala Tyr Glu Gly Val Glu Val Leu Ala Asp Ile Asp Leu Glu Leu  
 340 345 350

Glu Asp Gly Ser Leu Val Ala Leu Val Gly Pro Ser Gly Ser Gly Lys  
 355 360 365

Ser Thr Leu Leu His Leu Leu Ala Arg Tyr Met Asp Ala Gln Arg Gly  
 370 375 380

Glu Leu Glu Val Gly Gly Leu Ala Leu Lys Asp Met Pro Asp Ala Val  
 385 390 395 400

Arg His Arg His Ile Ala Leu Val Gly Gln Gln Ala Ala Ala Leu Glu  
 405 410 415

Ile Ser Leu Ala Asp Asn Ile Ala Leu Phe Arg Pro Asp Ala Asp Leu  
 420 425 430

Gln Glu Ile Arg Gln Ala Ala Arg Asp Ala Cys Leu Asp Glu Arg Ile  
 435 440 445

Met Ala Leu Pro Arg Gly Tyr Asp Ser Val Pro Gly Arg Asp Leu Gln  
 450 455 460

Leu Ser Gly Gly Glu Leu Gln Arg Leu Ala Leu Ala Arg Ala Leu Leu  
 465 470 475 480

Ser Pro Ala Ser Leu Leu Leu Leu Asp Glu Pro Thr Ser Ala Leu Asp  
 485 490 495

Pro Gln Thr Ala Arg Gln Val Leu Arg Asn Leu Arg Glu Arg Gly Gly  
 500 505 510

## 09743PC.ST25.txt

Gly Arg Thr Arg Val Ile Val Ala His Arg Leu Ala Glu Val Ser Asp  
 515 520 525

Ala Asp Leu Ile Leu Val Leu Val Ala Gly Arg Leu Val Glu Arg Gly  
 530 535 540

Glu His Ala Ala Leu Leu Ala Ala Asp Gly Ala Tyr Ala Arg Leu Trp  
 545 550 555 560

Arg Glu Gln Asn Gly Ala Glu Val Ala Ala  
 565 570

<210> 35  
 <211> 1725  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 35  
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 ccgttggtcg aggcctgggt cgccgaaggc gcgttgccct ggcgctgggt cgccgcgttg 180  
 ctcggttga gcctggcgca ggcgctgttg cagtacctgg ccctgcgtcg cggtttcgcc 240  
 gccggcggt cgctggcgcc tggactggtg cgcagcctgg tggcgcgctt gccgcgcctg 300  
 gcgccgccgg cgctgcgccg ggtcgcgccg gccgaaggcc tgctgcgcgg cccggtgatg 360  
 caggcgatgg gcattccggc gcacctgctg gggccgctga tcgccgcgtt ggtgacgccg 420  
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 gctggtgcct tcctcgccgc gctgttgccg tggagcgggc ggcgcaatct ggcggcgagg 540  
 gatgcccggc tggccgccga gcgcgacgcc gcacggcagt tgcaggcgtt cgccgaacgc 600  
 cagccactgc tgcgcgcgcg gcagcgcgaa agcgtcgccc gccaggggct ggaagaggcc 660  
 ttgcgcagtc tccaccgcag caccctggat ctgttgccgg gcagcctgcc cagcggcctc 720  
 ggcttcgccc tggcggtgca ggcggcgctt gccttcgccc tgctcggcgg cgcctgggcg 780  
 gtggagcggc aatggctgga cggcgctcgg ctggtggccg tgctggtgct gctggtgcgc 840  
 ttcacgcagc cgctggccca gctcaccat ctcgaccagg cgttgccggc cgcctggcag 900  
 gcgctggata ccctgctgcg ggttttcgcc ctggctccgc tgcgcagccc cgagccgggc 960  
 gagcgccgc acgacgccag cctggcgccc gaggccgtgg aattgcgcct ggaagatggc 1020  
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 gatgccgggc gtgtcctgct ggggtggcgt gatatccgcc ggttgagcga aacgaccctc 1200  
 gccgccagtc gtaacctggt gttccaggac aacggcctgt tccgcggcag cgttgccctgg 1260



## 09743PC.ST25.txt

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aacctgcgca tggcgcgagc ggacgccgat ctggaagcgc tgcgcgaggc ggcgcgggcg 1320
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ggcggcgcgc tgctgtccgg cggccagcgg caacgcctgt gcctggctcg cgggctgctc 1440
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```

```

<210> 36
<211> 574
<212> PRT
<213> Pseudomonas aeruginosa

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<400> 36

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Met Thr Leu Phe Glu Arg Met Arg Ala Leu Pro Glu Asp Cys Arg Ala
1           5              10              15

```

```

Ala Leu Arg Arg Ala Ser Ala Trp Ala Val Leu Ala Ala Leu Leu Asp
          20              25              30

```

```

Ala Ala Cys Gly Val Leu Leu Val Pro Leu Val Glu Ala Trp Phe Ala
          35              40              45

```

```

Glu Gly Ala Leu Pro Trp Arg Trp Val Ala Ala Leu Leu Gly Leu Ser
          50              55              60

```

```

Leu Ala Gln Ala Leu Leu Gln Tyr Leu Ala Leu Arg Arg Gly Phe Ala
          65              70              75              80

```

```

Ala Gly Gly Ser Leu Ala Ala Gly Leu Val Arg Ser Leu Val Ala Arg
          85              90              95

```

```

Leu Pro Arg Leu Ala Pro Pro Ala Leu Arg Arg Val Ala Pro Ala Glu
          100             105             110

```

```

Gly Leu Leu Arg Gly Pro Val Met Gln Ala Met Gly Ile Pro Ala His
          115             120             125

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Leu Leu Gly Pro Leu Ile Ala Ala Leu Val Thr Pro Leu Gly Val Ile
          130             135             140

```

```

Leu Gly Leu Phe Leu Ile Asp Pro Ser Ile Ala Leu Gly Leu Leu Leu
          145             150             155             160

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09743PC.ST25.txt

Ala Gly Ala Phe Leu Ala Ala Leu Leu Arg Trp Ser Gly Arg Arg Asn  
165 170 175

Leu Ala Ala Glu Asp Ala Arg Leu Ala Ala Glu Arg Asp Ala Ala Arg  
180 185 190

Gln Leu Gln Ala Phe Ala Glu Arg Gln Pro Leu Leu Arg Ala Ala Gln  
195 200 205

Arg Glu Ser Val Ala Arg Gln Gly Leu Glu Glu Ala Leu Arg Ser Leu  
210 215 220

His Arg Ser Thr Leu Asp Leu Leu Arg Arg Ser Leu Pro Ser Gly Leu  
225 230 235 240

Gly Phe Ala Leu Ala Val Gln Ala Ala Phe Ala Phe Ala Leu Leu Gly  
245 250 255

Gly Ala Trp Ala Val Glu Arg Gln Trp Leu Asp Gly Ala Arg Leu Val  
260 265 270

Ala Val Leu Val Leu Leu Val Arg Phe Ile Glu Pro Leu Ala Gln Leu  
275 280 285

Thr His Leu Asp Gln Ala Leu Arg Gly Ala Trp Gln Ala Leu Asp Thr  
290 295 300

Leu Leu Arg Val Phe Ala Leu Ala Pro Leu Arg Ser Pro Glu Pro Gly  
305 310 315 320

Glu Arg Pro His Asp Ala Ser Leu Ala Ala Glu Ala Val Glu Leu Arg  
325 330 335

Leu Glu Asp Gly Arg Ala Leu Leu Glu Asp Ile Ser Leu Arg Leu Glu  
340 345 350

Pro Gly Ser Leu Asn Val Leu Val Gly Pro Ser Gly Ala Gly Lys Ser  
355 360 365

Ser Leu Leu Ala Leu Leu Gly Arg Leu Tyr Asp Val Asp Ala Gly Arg  
370 375 380

Val Leu Leu Gly Gly Val Asp Ile Arg Arg Leu Ser Glu Thr Thr Leu  
385 390 395 400

Ala Ala Ser Arg Asn Leu Val Phe Gln Asp Asn Gly Leu Phe Arg Gly  
405 410 415

09743PC.ST25.txt

Ser Val Ala Trp Asn Leu Arg Met Ala Arg Ala Asp Ala Asp Leu Glu  
420 425 430

Ala Leu Arg Glu Ala Ala Arg Ala Val Gly Leu Leu Glu Glu Ile Glu  
435 440 445

Ala Trp Pro Gln Gly Trp Asp Ser Asp Val Gly Pro Gly Gly Ala Leu  
450 455 460

Leu Ser Gly Gly Gln Arg Gln Arg Leu Cys Leu Ala Arg Gly Leu Leu  
465 470 475 480

Ser Thr Ala Pro Leu Leu Leu Leu Asp Glu Pro Thr Ala Ser Leu Asp  
485 490 495

Ala Ala Ser Glu Ala Gln Val Leu Arg Ser Leu Leu Gly Leu Arg Gly  
500 505 510

Arg Arg Thr Leu Leu Val Val Thr His Arg Pro Ala Leu Ala Arg Gln  
515 520 525

Ala Asp Gln Val Leu Leu Leu Glu Glu Gly Arg Leu Arg Leu Ser Gly  
530 535 540

Leu His Ala Asp Leu Leu Val Arg Asp Asp Trp Tyr Ala Gly Phe Val  
545 550 555 560

Gly Leu Ala Gly Glu Glu Ser Ser Ala Thr Val Val Asp Arg  
565 570

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<211> 558  
<212> DNA  
<213> Pseudomonas aeruginosa

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<222> (85)..(85)  
<223> Unknown nucleotide

<220>  
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<222> (88)..(88)  
<223> Unknown nucleotide

<220>  
<221> misc\_feature  
<222> (174)..(175)  
<223> Unknown nucleotide

09743PC.ST25.txt

<220>  
 <221> misc\_feature  
 <222> (245)..(245)  
 <223> Unknown nucleotide

<220>  
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 <222> (293)..(293)  
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<220>  
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 <223> Unknown nucleotide

<220>  
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 <222> (325)..(325)  
 <223> Unknown nucleotide

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 gatcgggcct tgatgttacc cgagagcttg gcacccagcc tgcgcgagca gggnaattg 180  
 atccggtgga tgaccttttg aatgaccttt aatagattat attactaatt aattggggac 240  
 cctanaggtc ccctttttta ttttaaaaat tttttcaca aacggtttat tncataaag 300  
 cttgctcaat caatcacnt atccncggga attcggccta ggcggccaga tctgatcaag 360  
 agacagacct ccagctttgc atccggagcg accacacgag cgaggtcagt cactttcatc 420  
 gaaggaattt tcttgacata gatctacca ccttccatgt cctcaaaggc atgccacact 480  
 aactcgacgc cctcctccaa agaaatcatg aaccgggtca tccgctcatc agtgataggc 540  
 aagacgccct tgtccttg 558

<210> 38  
 <211> 479  
 <212> DNA  
 <213> Klebsiella sp.

<400> 38  
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 tagaccgtaa cgacgctgcc aggcgcgcag tgtgaccgga ttgattccgc aacgttcggc 120  
 gacttcaccg atactgtaaa acgcatagc agcctcacat caacctgata ccttaatacc 180  
 taaactaacg aattcaggca tcctgtacaa ctctattttc ttgtacagat aaagatatca 240  
 ggttgcggtc cacagcgcgc gggaaaaaag atgaaaaaat gtttagctga tttcgcggtg 300  
 gttcattttt tctccggcca tgcgacggcg ggtaggcccc ccaggcgcgc gctggcgaac 360

09743PC.ST25.txt

aaattgccct gaaactgtga aataccgggt gattccagcc acatccactc ttcagcacgc 420  
 tcaacgccga cggctgagac cgcaatctcc agagaagtac agcatttgat aatcgctg 479

<210> 39  
 <211> 516  
 <212> DNA  
 <213> Klebsiella sp.

<400> 39  
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 cgtctggttc gccctgagac ccgcgtggtg ttctctgaat cgcccggctc gatcaccatg 180  
 gaagtgcacg atgtgccggc gatagtcgcc gccgtgcgtc aggtcgcccc ggaagcgatt 240  
 atcatgatcg ataacacctg ggccggggg atcctgttta aagccctgga ttttggcatt 300  
 gatatttcca ttcaggcagg caccaaatac ctgatcgccc attccgacgc catggtgggc 360  
 accgcggtgg cgaacgcgcg ctgctggccg cagctgcgtg aaaatgccta cctgatgggg 420  
 caaatgctgg acgccgatac tgcctatatg accagccgcg gcctgcgaac cctgggcgtg 480  
 cgctgcgtc agcatcatga aagcagcctg cgcatc 516

<210> 40  
 <211> 377  
 <212> DNA  
 <213> Klebsiella sp.

<400> 40  
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 cccgcagcgt gtggcccagg agatgcaaaa agagattgcc atcatcctgc agcgtgaaat 120  
 taaagatccg cgtctgggca tgatgaccac cgtttccggt gtggaaatgt cccgtgacct 180  
 ggcctatgcc aaggtgtatg tcaccttctc taacgacaaa gatgaagccg cggtgaaagc 240  
 gggcatcaaa gcgctgcagg aagcttcttg ctttatccgc tctctgctgg ggaaagcgat 300  
 gcgtctgcgc atcgtaccgg aactgacttt cttctacgac aactcactgg tggaagggat 360  
 gcgtatgtcc aacctgg 377

<210> 41  
 <211> 625  
 <212> DNA  
 <213> Klebsiella sp.

<400> 41  
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 gcgctgatct gccgcggcga aaagctctcc atcgccatca tggcgggtct gctggaagcc 180  
 cgtggacaca aagtcagtgt cattaacccg gtcgaaaaac tgctcgccgt gggtcactat 240

## 09743PC.ST25.txt

```

ctggaatcca ccgtcgatat cgccgaatcc acccgccgca ttgccgccag ccagatcccc 300
gcagaccata tgatcctgat ggccggggttt accgccggca atgagaaagg cgagctggtg 360
gtgctggggc gtaacggctc cgactactcg gctgcggtac tggccgcctg cctgcgcgct 420
gactgctgcg aaatctggac cgatgtcgac ggagtgtaca cctgcgatcc gcgtcaggtg 480
ccggatgcgc gcctgctgaa atcgatgtct tatcaggagg cgatggagct ctctactttt 540
ggcgcgaaag tgctgcaccc gcgcaccatt gcccctatcg cccagttcca aatccccatgc 600
ctgattaaaa ataccggcaa ccccc 625

```

<210> 42  
 <211> 355  
 <212> DNA  
 <213> Klebsiella sp.

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<400> 42
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gctgacgcgc cgcaatttca tgcccctggt tttccggcag cgatggatga tacagctttt 120
tcaccagcgg ctgggttttc agatactcaa cgatcgccag ggcatttcgc tgcgccactt 180
ccatccgtgg agacagcgtc cgcagcccg ccaacagcag atagctgtcg aaggcgctgc 240
cggtgacgcc aatattatc gccaccatg ccagttcggt gacagttgcc ggatcttttg 300
caatcaccac ccgggccacc acatcggagt gaccattgag gtatttggtg cagga 355

```

<210> 43  
 <211> 500  
 <212> DNA  
 <213> Klebsiella sp.

```

<400> 43
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gctggtgacc ggcgtcggct gatggtgagc gaacagcttc tcgcccgtt ccagctcgtc 180
gaagacgctc tccatcatgc ggtcatgcag ctccgccgcc accgcggccc actgcgcttc 240
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cagaccgcag ttgtgagcga tatcggtagc tttagaagac caggagaga tggtgccagg 360
gcgaggggtc acgagcagta atttaccggt cggggtatgg ctgcttaagc tcgggccata 420
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aaaatgaata tattcgcat 500

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<210> 44  
 <211> 439  
 <212> DNA  
 <213> Klebsiella sp.

09743PC.ST25.txt

<400> 44  
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gaataagtcc ggccggaaaa tcagcatagc gtgagtgcgg ggccaggaaa gagtcgtcga 180  
aaccgcgggt cagtaaggcg tgcggatgaa gaatatggtg ttcatagacg ccggaaatct 240  
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aacagacgaa cagcgtcgaa gtgacgtgat ccttggccca ctccagcacc tgtttgatct 360  
gcggccagta agcaacatcg ttaaactcaa ccaggcctaa aggagcgccg gtaacaatca 420  
ggcgtcaaaa gttctgatc 439

<210> 45  
<211> 297  
<212> DNA  
<213> Klebsiella sp.

<400> 45  
gaggttcata tgtccgtact cgatctaaac gcgcttaatg cattgccgaa agtggaaacgc 60  
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gcgtgggcgc tggaaaatct gccgggaaac tatgtgctgt cgtcgagctt tggcattcag 180  
ggggcggtaa gtttgcattc ggtgaatcag atccgcccgg acattccggt gatcctcacc 240  
gataccggct acctgttccc ggaaacctat cagtttattg acgagctgac ggacaag 297

<210> 46  
<211> 502  
<212> DNA  
<213> Klebsiella sp.

<400> 46  
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acctgcccta ccgtcaggtc ggtgtggtgc tgggcaccgc caaatattac cgcaccggcg 180  
tcataaatca gtattaccgt taccgcatcc agggcgcgt gaacgcctac aacagcggca 240  
aggtcaacta tctcctgctg agcggcgata atgctctgca aagctacaat gaaccgatga 300  
ccatgcgtcg ggacctgatt aaaggcggcg tcgatcccgc ggatatacgt ctggactatg 360  
ccggtttccg taccctcgac tcgatcgtcc gtaccgggaa agtggttcgac accaaccgact 420  
tcattatcat caccagcgc ttcactgcg aacgggcgct gtttatcgcc ctgcatatgg 480  
ggatccaggc ccagtgtac gc 502

<210> 47  
<211> 500  
<212> DNA

09743PC.ST25.txt

&lt;213&gt; Klebsiella sp.

&lt;400&gt; 47

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gatccgctca aacagctgca ggccgagcac cttctcaaag cgcgccagct cgcggctgac      120
cgtgggttgc gaggtgtgca gcatccgcgc cgcttcgggtc aggttgccgg tggatcatcac      180
cgcggtgaaag atttcgatat gacgcaaatt gacggctggc atgcgggtctc cgtgaggctc      240
ggctggaacc atatcatttt tgcataagat cgcgataaaa cgatattttt tattcgtctg      300
tcaactgtggc gtaatcagaa aaaacagcga ccaacacacg cactgcaccg gagttcttat      360
gccacactcg ctttacgcca ccgatactga cctgaccgcg gacaacctgc tgcgcctgcc      420
ggcggaattt ggctgcccgg tctgggtcta tgatgcgcag attatcgcc gccagatagc      480
ccagctcagc cagtttcgac
                                                                                   500

```

&lt;210&gt; 48

&lt;211&gt; 229

&lt;212&gt; DNA

&lt;213&gt; Klebsiella sp.

&lt;400&gt; 48

```

ggcttccacc caaatcgctt tgctggcaac gatttttgct aaaacggctt tgcattcttt      60
acctctttgc ccgctaagtg cggtcactct gtcataggcc gcgccgctgc tgcagcacat      120
ccagtacctg ctgagcgcta gctttcagat cttcatgccc gtgtaaacgc atcaatatgg      180
cgacgttggc ggcgacggcg gcttcgtgag cggttccacc tttaccttg
                                                                                   229

```

&lt;210&gt; 49

&lt;211&gt; 466

&lt;212&gt; DNA

&lt;213&gt; Klebsiella sp.

&lt;400&gt; 49

```

tggctcaacg ctgctcagtg gtgcgaggtg tcactttggt gatcacatcg gcgttgtctg      60
cacagtgaia tcagatccag cgccgcgtcc ggttttacgc acgtagtccg gattgtgggt      120
gcctttctta acgatattca gccacggccc ttcgagatgc aggccagcgg cctggttcgg      180
atgtttttgc agatattcgc gcatcacgcg cagcccttgc ttcacagat cgtcgctgga      240
ggtaatcagc gtcggcagga agctgggtgca gcctgagcgt tcgttggcct tctgcatgat      300
ctccagcgtt tcgacagtga ccgcctctgg gctgtcgcta aactgcacgc cgccgcagcc      360
gttgagctgg acgtcgataa aaccgggggc gattattgcg ccgttgactg agcgctgctc      420
gatgtcagac ggcaaactctg ccagcggaca aagacgttcg ataaag
                                                                                   466

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&lt;210&gt; 50

&lt;211&gt; 450

&lt;212&gt; DNA

&lt;213&gt; Klebsiella sp.



09743PC.ST25.txt

&lt;400&gt; 50

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atcgggggttg gctgcgagca tatccccggg ctcttcatac aacaggacat ccacgctggc	180
ggcgggggtac tgctgtttca gcgcgtgaat aagcggcgtg atcagcagca tgtcgccatg	240
atggcgcagc ttaatgacca ggatccgcgc cgggttcaac gggccgcggg agagggtttc	300
aggcgtcata ctctgttctt catccaggat aagggttccg attctagggg atcagacaga	360
ttgagagaag cgttgtattg ctctaccatg acccgatacg tatggcctga ggacgttttc	420
gtgcacaatc ccgcaatttc tcatcacgat	450

&lt;210&gt; 51

&lt;211&gt; 450

&lt;212&gt; DNA

&lt;213&gt; Klebsiella sp.

&lt;400&gt; 51

cactcaggct tgccgtgaac gcttgttcgc catcacgtaa ggtcgtagcg aaaataatga	60
cttgctgggt catggttttg atccttagtc tgtgtcctgg cgccttggtg acgagcataa	120
aaaaaccgc gccaaaggcg gggttttata gtcttgctgg aagatgactt aacgctgaac	180
gtcgcccaac agcctaccga gcaaatggca tgcgtttagt agtagtaggc tgggtgatacg	240
agcgggtgcga atcattgcgt caaactccag atgaaatcgt tatgctttta gagttactgg	300
atagccgttt taaagtcaac ccctggcatg gaaaaagcgt tttgggctga ctaaataaat	360
tagcaaatg tgctgatgta agccccattt tgccgaagat cctatttttg accgaaggcg	420
gtttatcccc aatttgtttc atttgaaaaa	450

&lt;210&gt; 52

&lt;211&gt; 575

&lt;212&gt; DNA

&lt;213&gt; Klebsiella sp.

&lt;400&gt; 52

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ctgatccgcg ctttctgtga gcccggcgaa gacgcgggtgc tctactgccc gccgacctac	180
ggcatgtaca gcgtcagcgc cgagaccatc ggcgtcgagt gccgcaccgt gccgacgctg	240
gccagctggc agctcgacct gccgggcatc gaagcgcggc tggacggcgt gaagggtggtg	300
tttgtctgca gccgaacaa cccgaccggg cagattatcg acccgagtc gatgcgcgac	360
ctgctggaga tgaccgcggg caaagccatc gtggtggccg acgaagccta tattgaattc	420
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 gaggtgatta acgtgctgct gaaagtgatc gcccc 575

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 <213> Klebsiella sp.

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 cggtagggtc caagacgacc gacaaaagtg atgttggttt cattctcggc caatgacaaa 180  
 tatttttcaa gaagagccat ttctcccatc tggcgaatag gatagtaagg aatatcattt 240  
 tcttcacaag cacggctata ctctttataa caaacagagc cgtcgtgttg ttcccaggga 300  
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 actgcgcac cctgg 375

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 attttgagta tatttctata ctctatttta cgggaattat tttagcgggt gtcgggtttgt 180  
 ctattttcaa taaattaaaa tatcgatttg cagagatcta aaagtgcgct ataagagcag 240  
 catgctaggc tatttatggt cagtagcaaa tccattgctt ttgcatga ttactatatt 300  
 tatatttaag ctggtaatga gagtacaaat tccaaattat acagttttcc tcattaccgg 360  
 cttgtttccg tggcaatggt ttgccagttc ggccactaac 400

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 <213> Klebsiella sp.

<400> 55  
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 ttggcggcga agaacttttc cgatggccag aagccgtcgc taaaaatatg tttttgcagt 180  
 tcaaggaaca gcgcgacgtc gccgatcagc aggcgcgatt cgattaagtt ggtggcaacg 240  
 gtcagatccg agagaccttc cagcaggcac tcttcgaggg tgcgtacgct gtggcccacc 300  
 tccagcttga cgtcccacag cagggtgagc agttcgccga ctttttgcgc ctggctgtcc 360

09743PC.ST25.txt

ggcagttttt tacgactgag gatcagcaga tcgacgtctg agagcgggtg cag 413

<210> 56  
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 <212> DNA  
 <213> Klebsiella sp.

<400> 56  
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 actctctttc agccgaaata tcttgatcat gccgatgcgg tactcgcgat gtaccacgat 180  
 cagggcctgc ccgtgctaaa ataccagggc tttggccgcg gcgtgaacat tacgctcggg 240  
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 aaagcggacg tcggcagttt tatcacggcg cttaatctcg ccatcaaaat gattgttaat 360  
 acccaatgaa taatcgagtc catcagggcc atttagcccg caaacgcttc gggcagaact 420  
 tctcaacga tcagtttggt atcgacagca tcgtctcggc gattaacccg cagaaaggcc 480  
 aggcgatggt tgaaatcggc 500

<210> 57  
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 <212> DNA  
 <213> Klebsiella sp.

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 cgaaggcgtg gttatcgctt acgaaccagt atgggctatc ggtaccggca aatcagcgac 180  
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 tgacgctttc gcggtgatcg ttaaagcagc agaagcagcg aaaaaagcgt aattcgcttt 420  
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<210> 58  
 <211> 463  
 <212> DNA  
 <213> Klebsiella sp.

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## 09743PC.ST25.txt

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tatttcgcac atcaaaataa ctcttttttc ttctgtttgt tattcatggc catctattgg	360
cgaaataagg cagagtagag ggggatgtgc ctaatatcct gcggaaggaa cgcaatgtac	420
atttacaggg aggagctgac gagccgtttc gcgatagctt tag	463

<210> 59  
 <211> 526  
 <212> DNA  
 <213> Klebsiella sp.

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gaagagtatt ttcttctgac agcatgcctt taaaattatt gcggcagttt actattgctg	120
catataaata tattgccagt aataagcgt gtatatattt gtttgaacat gaccgcgaca	180
gaaaaaaact ggctaagttg gttggactcg aagaacaaca gactattgtt attgatgggtg	240
caggcattaa tccagagata tacaaatatt ctcttgaaca ggatcacgat gtccctgttg	300
tattgtttgc cagccgtatg ttgtggagta aaggactggg cgacttaatt gaagcgaaga	360
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atgataaaga tgcaatttcc cttcagggtc attgaaaatt ggcatcagca aggattaatt	480
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<210> 60  
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 <212> DNA  
 <213> Klebsiella sp.

<400> 60	
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aatcgaagcg ctgctgccga cgaatctcgg tcggctggcg gaatcagcaa gct	473

<210> 61  
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 <212> DNA  
 <213> Klebsiella sp.

## 09743PC.ST25.txt

&lt;400&gt; 61

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gcaaatgcta aaaaaggggag aggggattac cagctggcgcg gcttttccgc gccgagatta      180
tccagcacgg cgcgccagcg caggccgtca ggaaagtga ggtccggggc gatctcgaac      240
agcgggccaga gcataaagcc gcgggtttttc atatcgtagt gcggaacggg caggcgctcg      300
ctgttaatga cagcatcgcc aaacagcatg atatcgaggt ccagcgtgcg cggcccccag      360
cgttcggctt tgcgcaactcg cccctgctgc agttcgatgc gctgagtatg atcgagcagc      420
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&lt;210&gt; 62

&lt;211&gt; 525

&lt;212&gt; DNA

&lt;213&gt; Klebsiella sp.

&lt;400&gt; 62

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tcttgaccgg cgtcaggggtc aagtcacaaa aatcatcaca attttccgtc accggcgcta      180
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&lt;210&gt; 63

&lt;211&gt; 475

&lt;212&gt; DNA

&lt;213&gt; Klebsiella sp.

&lt;400&gt; 63

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aagattcgca gtaaaactcg gcgttttgcg ctttctcggc gaaatgatag agctcagctt      420
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09743PC.ST25.txt

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<213> Klebsiella sp.

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